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The Treasury of Atreus*

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THE Treasury of Atreus is one of the most important monuments of the Bronze Age in Greece and is universally recognized as the supreme example of Mycenaean architecture. It is also the finest of all the many beehive or tholos tombs which are such a striking feature of Mycenaean culture. The beehive-tomb is essentially a creation of the architecture of the Greek mainland and of Mycenaean as opposed to Minoan building. In Crete so far three beehive-tombs of Bronze Age date are known, two of which—one at Hagios Theodoros and another just found at Knossos—date from late L.M. III, the very end of the Bronze Age. The third, found at Knossos in 1938, is not to be dated earlier than 1500 B.C. All three are small and poorly constructed. The Early Bronze Age circular ossuaries of Mesarà in Crete, often erroneously described as beehive-tombs, are, as Professor Marinatos has proved, nothing of the kind. On the other hand, on the Greek Mainland and in the islands immediately adjacent to it, at least forty beehive-tombs are so far known. These figures are enough to indicate that the beehive-tomb is a product of Mainland or Mycenaean rather than of Cretan or

* The nine beehive tombs of Mycenae are described in the *Annual of the British School at Athens*, xxv, 283 ff., and the Treasury of Atreus specifically on pp. 338–57 of that volume. Further points in connexion with them are discussed in the *Journal of Hellenic Studies* 1926, p. 110 ff., and in Persson, *Royal Tombs at Dendra*, p. 140 ff.

The theories of Sir Arthur Evans on the beehive-tombs and the Treasury of Atreus are in his *Palace of Minos*, III, p. 201, and IV, 244, and in his *Shaft Graves and Beehive Tombs*, p. 67 ff., especially pp. 76–77, and 92. Professor Myres' views will be found in his *Who were the Greeks?*, pp. 282–4, 381–2, 574.

ANTIQUITY

Minoan architecture. More accurate information about the date and construction of the Treasury of Atreus, the finest of all the beehive-tombs, cannot fail to enlarge our knowledge of the history and art of the Mycenaean civilization.

In the British excavations at Mycenae in 1920-1923 study of the Treasury of Atreus with these objects in view was begun. Apart from the making of a fresh plan (FIG. 1), attention was directed to an examination of the threshold and of the walls of the dromos or entrance passage. The threshold which lies across the centre of the doorway is constructed on the wedge-principle, as were the thresholds of the other two beehive-tombs of Mycenae, which belong like it to the third or most advanced group, and also that of the Treasury of Minyas at Orchomenos which strongly resembles the Treasury of Atreus in structure. At each end of the threshold against the door-jambs, or rather against the massive sides of the doorway, is a great block of conglomerate. These are set close to the jambs and their inner edges are cut obliquely, thus leaving a small triangular or wedge-shaped gap between them. This gap is filled by two wedges of *poros*, soft limestone—one thin, the other thick. The thicker wedge was driven in first and then the thin one, thus forcing the two conglomerate blocks tight against the door-jambs and making the whole threshold secure. The use of *poros* (see PLATE IV), in this manner, for which it is far better suited by its nature than conglomerate, is not unusual in Mycenaean architecture. In the Tomb of Genii, for instance, the relieving triangle over the lintel is closed with blocks of *poros*, the uppermost of which at the apex of the triangle was cut wedge-fashion and thrust in so as to form a kind of keystone to the whole. The use of two kinds of stone in the threshold would not be noticeable, because when the wooden door frame was inserted between the jambs the stone threshold was covered with bronze or wood as described by Homer. In the excavation the wedges of *poros* were removed and the southern threshold block lifted. Underneath it were found some beads of stone and paste, fragments of gold leaf, bronze, and ivory bronze nails, and three potsherds of good Late Helladic III date, probably of the mid-fourteenth century B.C.

In the dromos a trench was dug across it about five metres from its entrance, between two large conglomerate blocks which there form the base of the northern and southern walls. These blocks, of which the northern one is cut like a lintel, span a pocket in the rock through which the dromos was excavated. The pocket was filled up to the level of the clay floor of the dromos with the broken and powdered rock dug

THE TREASURY OF ATREUS

out during the excavation of the dromos. Its northern and southern ends on the lines of the dromos walls are spanned by these two great blocks of conglomerate, which serve as sure foundations for the upper courses of the walls themselves. The use of these lintel-like blocks in such a position and for such a purpose, where a modern architect would use a steel girder, accords with correct architectural practice. In the powdered and broken rock-filling of this pocket many potsherds were found and also a fragment of a terracotta figurine.

All these date from the beginning of the Late Helladic III period, not later than the middle of the fourteenth century B.C. These would have been thrown into the rock-pocket with the powdered and broken rock from the excavation of the dromos, and are thus not later in date than the construction of the tomb. As they are all of the L.H. III period, not later than about 1350 B.C., this is a *terminus ante quem* for the tomb. The date thus arrived at agrees with the evidence obtained from under the threshold. In the report of the excavations the tomb and its companions of the third group of beehive-tombs were accordingly dated to the fourteenth century B.C. This date harmonized with that arrived at by a study of the gradual advance in architecture shown by the three groups of beehive-tombs, a logical and natural evolution. By these means a date for the Treasury of Atreus was obtained which agreed admirably with those independently determined for other buildings at Mycenae, such as the Palace and houses within the Cyclopean walls, and also with the dating by Professor Kurt Müller of the Palace at Tiryns. These results were accepted by most of the scholars who have devoted themselves to Aegean archaeology. Sir Arthur Evans and Professor J. L. Myres, however, have raised objections to them.

There seems to be abroad a theory that all great works of art of the Bronze Age in Greece depend for their inspiration entirely on Minoan Crete, and consequently that they must precede the destruction of Knossos and the Cretan palaces about 1400 B.C. With this underlying idea attempts have been made to show that the Treasury of Atreus, the most perfect structurally of the beehive-tombs, is the earliest, is purely Minoan, and should, therefore, be dated to the close of the Middle Bronze Age in the late seventeenth century, the great building epoch at Knossos and Phaistos. Study of the beehive-tombs of Mycenae in the excavations of 1920-1923 showed that they can be classified, according to their structure, in three groups. The first group is characterized by rubble masonry, the second by ashlar masonry in soft stone, and the third by ashlar masonry in hard stone. There

ANTIQUITY

are other architectural details in the lintels, the relieving triangles, the construction of the jambs, and the proportions of the dromos which suggest that there was a steady advance in construction from the first group through the second to the third. Further, the pottery and other objects found in them indicated that the third group was the latest and the first group the earliest. These results agreed with the view that the tombs more elementary in structure are older than those more advanced. This leads to the corollary—that ashlar masonry, an advanced type, is later than rubble masonry, which is obviously more primitive in character. Sir Arthur Evans, however, maintains that the structural evidence can be read both ways and that the finest beehive-tombs should come first, and the primitive at the end of the series as degenerate and decadent. This reverses the natural order of steady improvement and would imply that the arts gradually declined rather than advanced, and that ashlar masonry would have preceded rubble. A certain example to the contrary is to be seen in the tomb of Aegisthus (Mycenae) where the outer façade is of ashlar, and the inner façade, the doorway, and beehive are of rubble masonry. It would have been physically impossible to build the ashlar outer façade before the inner façade and beehive. The theory then of decline (that is of *dimuendo* rather than of *crescendo*) becomes highly improbable.

It is also contrary to human experience and to anthropological principles that the earliest example of any work demanding proficient skill should be the best. Man usually achieves his best results by practice which proverbially makes perfect. It would be more natural for the Treasury of Atreus, as the finest example of the beehive-tomb, to come at the culmination rather than at the inception of the series. As many poets must have preceded Homer, so many beehive-tombs must have been built before the days of the great architect who planned and constructed the Treasury of Atreus, or Tomb of Agamemnon as it is known locally. *Vixere fortes ante Agamemnona multi* in very truth.

Sir Arthur Evans and Professor Myres concentrate their attack on the Treasury of Atreus on two main points, the threshold and the dromos walls, because underneath them Late Helladic III, fourteenth century, pottery was found. Their *a priori* belief is that the tomb must be Cretan in inspiration and so date from the seventeenth century. Thus they argue that because Late Helladic III pottery (too late to fit their date for the tomb) was found beneath the threshold and the dromos walls, these must be later than the dome to have been damaged and repaired. Ignored is the principle of the wedge-construction of

THE TREASURY OF ATREUS

the threshold which is described as broken and restored. Yet this very wedge-principle is the only correct architectural method for inserting a threshold tightly between previously constructed solid jambs such as those of the Treasury of Atreus. The same principle was followed in inserting the sills in the Parthenon, which has not yet been described as degenerate or decadent. It is also found on the Palatine in buildings of the Flavian period, the period which produced the Colosseum.

The use of two kinds of stone is also considered a sign of decline or incompetence. The combining of *poros*, however, with conglomerate which, though admirable for solid and massive structures, is not, from its very character, well adapted for use for wedges, finds an analogy in classical Greek architecture in the Temple of Apollo Patroos in the Agora at Athens. In this fourth century building blocks of *poros* were let into the conglomerate foundation blocks because the latter material was not homogeneous enough to hold the dowels firmly, whereas the consistent nature of *poros* enabled the dowels to be fitted tightly and accurately. In these two cases Mycenaean builders can be seen to have employed methods practised by architects at the zenith of Athenian architectural achievement.

Sir Arthur Evans and Professor Myres allege that the dromos walls also have been subject to restoration. The former asserts that 'it must be regarded as archaeologically proven that the dromos walls in their existing form do not represent the original construction'. The latter believes that the façade of the tomb was originally wider because he thinks the dromos walls do not bond with it and that the dromos walls have been moved inwards.

This theory that the dromos walls were moved and rebuilt sounds almost fantastic. The dromos walls are about nineteen metres long and at the façade about ten metres high, and these dimensions give a cubic content of at least six hundred cubic metres of masonry, or a weight of over twelve hundred tons, and no one familiar with the huge conglomerate blocks of these noble walls would dream of suggesting that the Mycenaeans, who were a practical people, would have undertaken the gigantic task of moving that mass of masonry a few centimetres. The time and labour of taking down and re-erecting this quantity of material without damage in so confined a space would be enormous and quite purposeless. Further, as will be seen below, there is indisputable evidence from the 1939 excavations that the dromos could never have been any wider.

One of the main objects of the Mycenae excavations of 1939 was

ANTIQUITY

the continuation of the study¹ of the Treasury of Atreus, especially as regards the dromos walls. Tests were dug at each end of the façade to see whether it ran behind the western ends of the dromos walls (FIG. 1). It was found that the width of the façade is equal to the distance between the west ends of the dromos walls and further that there is in fact an elementary bonding of the dromos walls with the façade, especially in the case of the southern wall (PLATE 1). So as far as the façade is concerned the dromos cannot have been wider, and the existence of bonding between the dromos walls and the façade suggests simultaneous construction, or at least that both were parts of one uniform design.

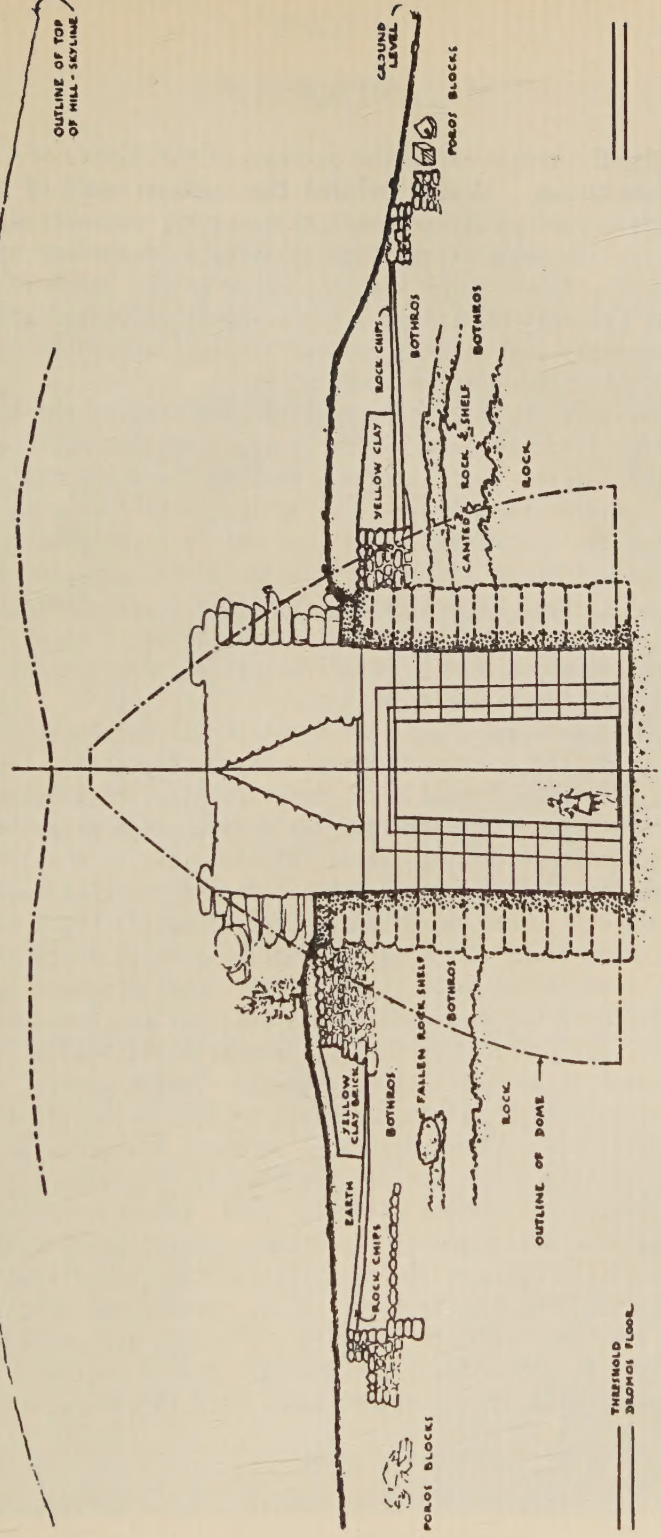
Tests dug across the eastern ends of the dromos walls and behind the southern dromos wall at a point fifteen metres from the façade revealed the details of their construction (FIG. 1). They are built in ashlar, with massive blocks of conglomerate bonded behind with rough limestone blocks, built up with the tough yellow clay used by the Mycenaeans as mortar, and dug from beds at Plesia about twenty minutes on foot southwards from Mycenae. The wall varies in thickness from 2 metres at the eastern end or entrance of the dromos, and fifteen metres from the façade to three metres or more at a point ten metres from the façade and by the façade itself. As the dromos walls gradually rise in height from 0.50 metre at the entrance or east end to 10 metres at the west end by the façade, it is perfectly natural that they should correspondingly increase in thickness. At the west end by the façade they have to support both the pressure from the ground behind them and also some thrust from the façade itself. Thus it was absolutely necessary that the dromos walls should be broad and strong, for unless they had been so built they would have been endangered by their own height, as they neared the façade. The Mycenaean architects' constant aim was strength, and in this case it was well achieved, as testified by the wonderful preservation of the walls after exposure to the ravages of over thirty centuries. Behind the main wall is a backing of crude brick of the same yellow clay which varies from 2.50 metres to 4 metres wide. The object of this clay-brick backing is clearly to keep the walls watertight, that is to prevent water collecting behind them or seeping through them. Should that happen the stability of the walls would be endangered, for the water would press the walls inwards into the dromos.

¹ In this we had the valuable collaboration of Mr Arnold Silcock, an architect, to whose skill the plans and sections are due. The excavation work at the Treasury of Atreus was supervised by Miss Helen Thomas.

TREASURY OF ATREUS MYCENAE

MATERIALS
CONGLOMERATE
ROUGH STONE
EARTH
ROCK

OUTLINE OF TOP
OF HILL - SKYLINE



CROSS SECTION G.H.
THROUGH DROMOS

SCALE 0 5 10 15 METRES

FIG. 1

ANTIQUITY

This has actually happened to the dromos of the Tomb of Clytemnestra since its excavation. Water behind the eastern wall of that dromos has caused it to incline inwards in a threatening manner, and it has had to be strutted throughout with heavy baulks of timber by the Greek archaeological service. The waterproofing of the backs of the dromos walls of the Treasury of Atreus has had the effect aimed at by its architect, for the walls still stand true and vertical and there are no signs of any seepage or damage by water.

At a point fifteen metres from the façade behind the southern wall the clay-brick backing rests on the surface of the rock, which is cut away vertically to the north, directly behind the main wall of limestone and conglomerate (PLATE II). The wall is built directly against the cut rock-face, proving indisputably that the dromos can never have been wider. Some of the conglomerate blocks, which seem to be more often laid headerwise than stretcherwise, run right back through the thickness of the masonry wall and thus demonstrate that the wall is one simultaneous construction. Needless to say there is no sign of the wall having been restored or moved.

Further tests were dug behind both the northern and southern walls at a point ten metres from the façade (FIG. 2). Here the construction of the wall followed in the main the principles already observed, but with variations. Underneath the clay-brick backing lies a layer of chipped and powdered rock similar in character to the powdered and broken rock found in the pocket beneath the dromos floor in 1921 as described above. This, which varies in thickness from 0.10 metre to 0.30 metre, runs under the rough limestone portion of the main dromos walls, and overlies on both the northern and southern sides a deep deposit of refuse lying in a rock-cleft similar to that beneath the dromos floor between the two huge lintel-like blocks in the walls. The deposit, which consists of broken pottery, animal bones, shells, fragments of painted stucco, and terracotta figurines, underlies the limestone portion of the main walls. The sherds of broken pottery can be counted by the thousand, and most of the sherds of plain unpainted ware seem to belong to household vessels. The shells are those of oysters and other edible shellfish. The bones, which have nearly all been split for the extraction of the marrow, are mainly those of domestic animals, sheep, goat, pig, and ox. The painted stucco includes pieces of circular altars or tables of offering. The deposit is clearly domestic in character. It is reasonable to assume that it would not have been brought up the hillside, but rather have been thrown down it. On the



TREASURY OF ATREUS, SOUTH SIDE (see p. 238)





(1) TREASURY OF ATREUS. A GOOD EXAMPLE OF THREE-LEGGED COOKING POTS (*see p. 245*)



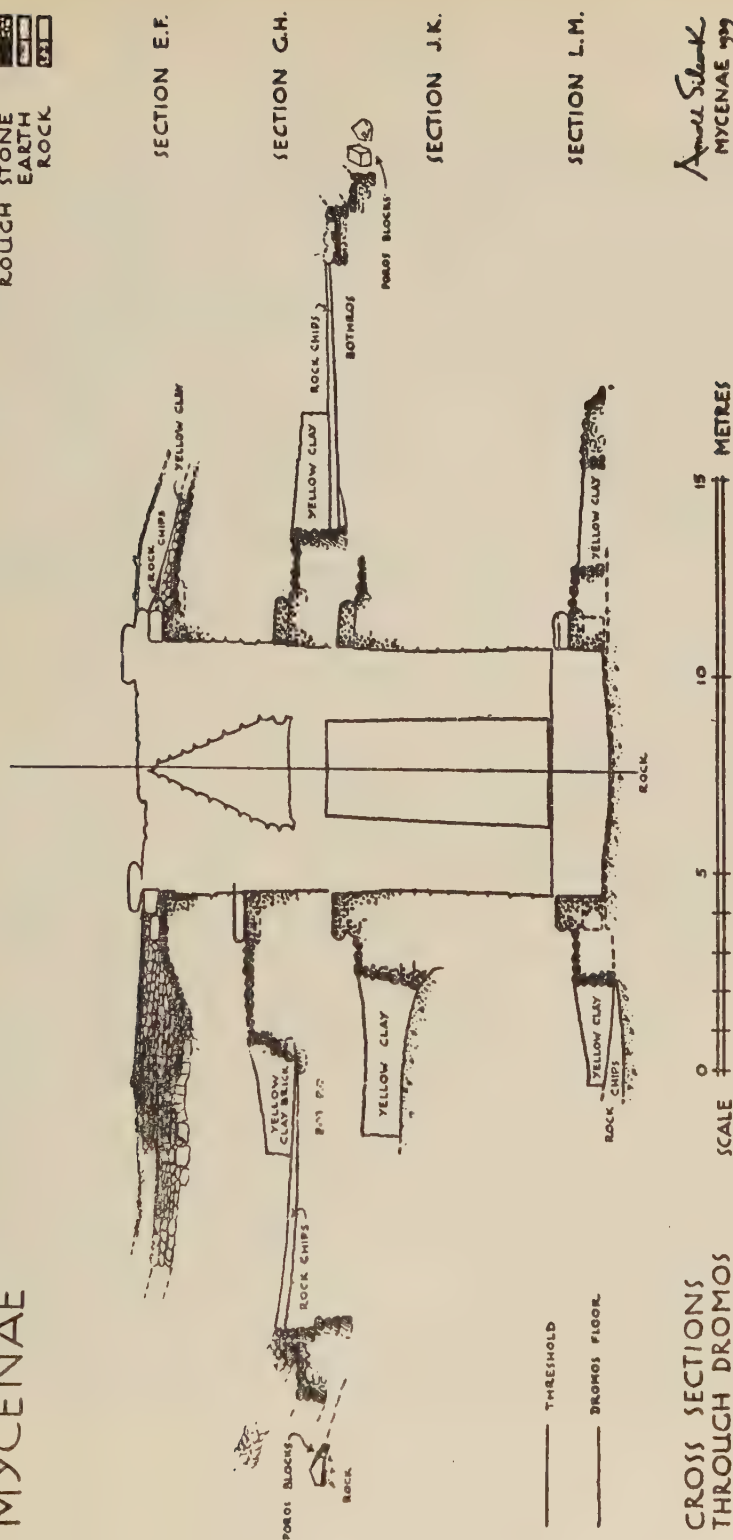
(2) SPIRAL PATTERNS ON VASES FROM BOTHROS DEPOSIT c. 1400 B.C. (*see p. 245*)

PLATE IV



TREASURY OF ATREUS: POROS BLOCKS FROM DESTROYED BUILDING FOUND BELOW RETAINING WALL TO SOUTH OF DOME AND DROMOS (*see* p. 248)

MATERIALS
CONGLOMERATE
ROUGH STONE
EARTH
ROCK



CROSS SECTIONS THROUGH DROMOS

Amell SilenK
MYCENAE 939

FIG. 2

top of the ridge above the Treasury of Atreus Steffen marked the remains of 'Cyclopean' buildings which can still be observed. Trial trenches were accordingly dug at one or two points on the ridge top, and they brought to light the foundations of well-built Mycenaean walls and a quantity of pottery of good fabric which in general agrees with that from the deposit found behind the dromos walls of the Treasury lower down. It seems probable therefore that on the top of the ridge there once stood a number of good Mycenaean houses, and that the natural cleft in the rock, where the Treasury of Atreus was afterwards built, was used by their inhabitants as a suitable and convenient place to dump their household refuse. A somewhat similar dump of pottery and other refuse was found in the excavations of 1921, in a pocket in the rock a little to the north of the Treasury of Atreus. Its contents agree well in character and date with that from the corresponding deposit at the Treasury of Atreus. The houses that stood on the ridge, to judge by their structure and the pottery and other remains from them, must have formed a good, well-to-do residential quarter, the first so far found outside the citadel walls of Mycenae. To this quarter probably belonged the chamber-tombs found by Tsountas on the west side of the ridge and also those on the east side of the ridge, the Third Kilometre Cemetery. These chamber-tombs include some of the finest and largest at Mycenae and in the same area lie two beehive-tombs, the Panagia Tomb and the Treasury of Atreus. These considerations confirm the impression already derived from a study of the structure of the houses and their contents. The excavation of this important area, had, however, to be left for a future occasion. It may be noted that on the hill surface one or two fragments of stone vases were found.

The stratification of the deposit in the rock-cleft behind and under the dromos walls at this point, ten metres from the façade, indicates that the dromos must have been cut through the deposit, and sherds from the same vases found both north and south of the dromos walls show that the deposit in the rock-cleft is all one. When the open cut or gallery for the dromos of the Treasury of Atreus was dug into the hillside it was excavated in the rock and thus driven straight through the rock-cleft of refuse (cf. FIG. 2). When this was being done the broken and powdered rock from the excavation was thrown out right and left over the surface, and thus the powdered rock overlying the deposit of household refuse in the rock-cleft cut through by the dromos proves that that deposit precedes in date the excavation for the tomb. The

THE TREASURY OF ATREUS

evidence for the date of that deposit, which is of fundamental importance for the date of the tomb, will be discussed below.

The layer of powdered and broken rock runs back from the rear of the dromos walls for about 6.50 metres and stops against retaining walls which run up the hill obliquely north and south of the tomb. These walls are strongly, though roughly, built of rude limestone blocks. They are founded on the rock and are broader at the base than at the top. As they run obliquely on either side of the dromos up the hillside they so to speak flank the base of the dome, and the northern one was traced to a point northwest of the centre of the dome. They thus retain the base of the mound of earth which covers the apex of the dome, and by weighting it in this manner supply the load necessary to keep the apex and upper courses of the vault in their correct position. The dome is built at its base as a kind of cylinder in a circular excavation in the rock approached by a horizontal open gallery, the dromos. Up to the point where it emerges from the rock the dome is supported all round by it, which forms a kind of continuous natural buttress and counteracts the thrust of the upper part of the vault. Above the point where the dome rises above the rock and curves inwards towards its apex the masonry has no external natural support and so the architect weighted it with a mass of earth to give the pressure necessary to prevent any movement of the stonework. This mass of earth is protected from erosion by the retaining walls on either side which secure its base. In Messenia Dr Valmin noted the existence of somewhat similar retaining walls round the bases of the artificial mounds covering beehive-tombs.

The layer of powdered rock was found everywhere running from the tomb and dromos up against the top of the retaining walls, and on the south side at one place it was found to include chips of conglomerate, one at least from a sawn block. These chips obviously come from the dressing of the conglomerate blocks of the tomb, as they were being placed in position, and make it more than ever certain that the layer of powdered rock is contemporary with the construction of the tomb.

On the north side, at a point 10 to 15 metres due north of the inner or west end of the doorway of the Treasury, the layer of powdered rock was found to overlie the remains of two earlier walls which had a rock cutting between them. Here lay the remains of decomposed crude brick and much broken pottery, some fragments of frescoes, and a few terracotta figurines. The general character of this deposit, so far as date is concerned, agrees with that of the great deposit in the rock-cleft behind the dromos walls. This is clear evidence that some earlier

ANTIQUITY

building stood on part of the site and was probably removed to make way for the tomb.

A consideration of the purely archaeological and stratigraphic results of the investigations of the dromos walls and façade gives the following fixed points :

A The dromos was never any wider because the façade is only as wide as the dromos itself and the dromos walls are built against the rock.

B The deposit of household refuse found in the rock-cleft north and south of the dromos walls was cut through by the builders of the tomb when they excavated the dromos. This is clearly seen in the section (FIG. 2).

C The powdered and broken rock found in the rock-pocket near the entrance to the dromos, between the two large lintel-like blocks and the layer of rock chips running down to the tops of the retaining walls on either side of the dromos over the deposit of household refuse in the rock-cleft ten metres from the façade, and over the earlier walls north of the doorway, were obviously produced by the excavation of the tomb and are contemporary with its construction. Since the layer of rock chips lies north of the doorway as well as on either side of the dromos and is clearly one homogeneous layer, it shows that dromos and dome were constructed simultaneously.

D The pottery in the deposits of household refuse, that in the rock-cleft north and south of the dromos, and that between the earlier walls north of the doorway together with the other objects in those deposits, terracotta figurines and fresco fragments, therefore undoubtedly antedates the construction of the tomb.

The evidence of the 1939 excavations demonstrates that there is no sign of any reconstruction or restoration of the tomb or of the moving of the dromos walls, but that the dromos and dome were built together as one uniform plan and design.

Further it is obvious that the date of the latest pottery in the deposits mentioned gives a fixed date which must precede the building of the tomb.

The terracotta figurines found in those deposits are of the same types, human and animal, as the ordinary Mycenaean terracotta figurines which so far have never been found in any deposits earlier than the beginning of Late Helladic III, the fourteenth century B.C.

The fresco fragments include pieces with large striated foliage

THE TREASURY OF ATREUS

designs in blue, black, and red on a white ground, not unlike some from the Ramp House deposit at Mycenae, which Evans compares to examples from Knossos and dates to the closing stage of the Palace Period at the end of L.M. II, the last years of the fifteenth century B.C.

The pottery divides roughly into two main groups, the painted and the unpainted. The latter includes plentiful fragments of small cups and bowls of pale yellow buff ware, and a great number of pieces of domestic vessels of red earthenware, among which storage jars of various sizes and three-legged cooking pots are prominent. A good example of the last type was found in 1939 in a trial trench on the ridge immediately southeast of the Epano Phournos beehive-tomb where the walls of a L.H. III house were found (PLATE III, 1). Among the painted fragments were a great number of pieces with stippled decoration in reddish, red brown, or dark brown paint, and the two most noticeable shapes are the open tea cup and the mug or tankard. There were many varieties of spiral patterns, but of a late (L.H. III) rather than an early (L.H. I-II) type. Among other shapes the alabastron (PLATE III, 2) is prominent, though no complete or nearly complete example has yet been put together. The patterns are mainly of the usual wave-type on the sides, but on the bases the only pattern that occurs is that of concentric circles. This latter pattern first occurs on the bases of alabastra towards the end of L.H. II and is characteristic of L.H. III alabastra. A fragment of a rhyton or filler of the funnel-shaped type is decorated with thick and thin bands in reddish orange-brown paint, and resembles rhyton fragments from Tell el Amarna and from Tell Abu Hawam in the Museum of Classical Archaeology at Cambridge. From fragments most of two vases could be put together. One is a mug or tankard of the usual type which became popular at the end of L.H. II and flourished in L.H. III. It is decorated with the scale or net pattern which, though it appears in L.H. I and II, only really came into favour in the succeeding period. The other vase is a piriform jar with three vertical ribbon handles on its shoulders. It has thin and thick bands of reddish brown paint on the lower part of the body and the upper part displays a floral motive of a crocus, iris bud, or palm type. This shape of amphora with vertical ribbon handles is earlier than the similar shape with horizontal loop handles, and occurs down to the first stage of L.H. III. The floral pattern resembles distantly one of the favourite patterns of Ephyrean goblets, and is known on amphorae of much the same form found by Blegen at the Argive Heraeum and dated by him to L.H. III.

ANTIQUITY

Among the pottery too there are a few pieces of L.H. I and of earlier L.H. II style and one or two pieces of rather coarse Palace Style amphorae. On the other hand it is noticeable that the later L.H. III pottery is conspicuous by its absence, and that the kylix is rare. The most striking feature of the pottery is its uniformity. It may be said to belong almost entirely to the latter part of L.H. II and to the early part of L.H. III, and there is nothing that could be definitely classed as later than the Tell el Amarna style. This deposit in its general character, as stated above, resembles that found in 1921 a little to the north of the Treasury of Atreus which included pieces of stippled ware, alabaster fragments, terracotta figurines, and one or two kylix fragments. It resembles also the deposit found in 1921 below the Ramp House. In that were terracotta figurines, fresco fragments with striated foliage in blue, black and red on white, and among the pottery many pieces of stippled ware, especially of mugs or tankards, and some characteristic early L.H. III sherds. The Ramp House deposit was specially noted as belonging to the beginning of the L.H. III period and contemporary approximately with the pottery from the dromos of Tomb 505.

The net result of this brief survey of the deposits underlying the layer of rock-chips, that in the rock-cleft cut through by the dromos of the Treasury of Atreus, and that between the earlier walls north of the doorway, is that in the main they belong to the latter part of L.H. II or the beginning of L.H. III, and since there is nothing that appears to be later in style than the pottery from Tell el Amarna the range of the bulk of the deposit can be dated to 1450-1350 B.C. Since, as already seen, this deposit obviously antedates the construction of the Treasury of Atreus, it inevitably follows that the Treasury was not constructed before 1350 B.C. This dating agrees with that arrived at from the excavations of 1920-1923, and since the 1939 dating is based, not on a small quantity of material, but on thousands of fragments of pottery, and is supported by absolutely clear stratigraphic evidence, it may be taken as proved that the Treasury of Atreus was constructed in the fourteenth century B.C., not earlier than 1350 B.C.

To this fixing of the date of the Treasury of Atreus other conclusions logically succeeded. This date confirms the view previously arrived at by a study of the architectural development of the beehive-tombs that they are structurally to be arranged in three groups, and that the third or most advanced group, to which the Treasury of Atreus belongs, is to be dated to the fourteenth century B.C. The tomb of Genii, the first tomb of that group, may be dated to 1400 B.C., or soon

THE TREASURY OF ATREUS

after ; the Treasury of Atreus to 1350 B.C., or a little later ; and the latest, the Tomb of Clytemnestra, to about 1300 B.C. Of the other two groups of beehive-tombs the first can be assigned to about 1510 to 1460 B.C., and the second group to about 1460 to 1400 B.C. Thus the age of ashlar work in *poros* or soft stone, so characteristic of the second group, falls in the fifteenth century, and that of ashlar work in hard stone or conglomerate, the feature of the third group, in the fourteenth century.

The next conclusion that follows is that the theories of Professor Percy Gardner and Sir Arthur Evans, that the contents of the Shaft Graves (except the Sixth Grave) represent the contents of the beehive-tombs transferred thither at a later date for safety after the Cyclopean walls were built, are untenable and fallacious. The contents of the Shaft Graves are to be dated to L.H. I (c. 1600–1500 B.C.); it is obvious that a beehive-tomb not built before 1350 B.C. could not have had a purely L.H. I contents. If the contents of the Treasury of Atreus built about 1350 B.C. had been transferred to the Shaft Graves, there should have been L.H. III objects in the Shaft Graves. The Shaft Graves are part of the Prehistoric Cemetery used from Middle Helladic times to the end of Late Helladic II (i.e., from about 2000 to 1400 B.C.), when it was cut through by the building of the Cyclopean fortification wall of the citadel. Then the Grave Circle was constructed to protect the sacred royal Shaft Graves as a hallowed area. This was confirmed in 1939 also by the discovery of part of the Prehistoric Cemetery outside the Cyclopean walls west of the Lion Gate. One of the tombs found there was a shaft grave of late sixteenth century date. At any rate the positive and cumulative effect of the evidence derived from the excavation and study of the monuments of Mycenae, strengthened now by the results of the excavations of 1939, puts completely out of court the 'transference' theory about the contents of the Shaft Graves and its attendant theories about the dating of the beehive-tombs and the 'restoration' of the Treasury of Atreus. The vital importance of the date of the Treasury of Atreus for this is indicated by the attempts of Sir Arthur Evans and Professor J. L. Myres to explain away the archaeological facts derived from excavation and their theory that the dromos walls have been restored or moved. With the new evidence both stratigraphic and ceramic which confirms that date of the Treasury of Atreus to about 1350 B.C., the base of this house of cards of hypothesis is knocked away completely.

One other discovery made in 1939 supports the fourteenth century

ANTIQUITY

date of the Treasury of Atreus. Directly below the oblique retaining walls on either side of the dromos and dome a large number of worked blocks of *poros* (soft limestone) were found. They lay in complete disorder as if they had been dragged down the hillside and thrown over the top of the wall higgledy-piggledy (PLATE IV). These blocks are of two types, one roughly triangular in plan with a dressed face and rough sides and tapering towards the back, and the other roughly triangular in section and almost of a pedimental shape. Many of the first type have clamp holes in their upper surfaces, and seem to have been cut for the faces of a double-faced wall, the interior of which was composed of rubble work set with clay, somewhat like the west wall of the Palace at Knossos or the north wall of the court of the Mycenae Palace. Wooden clamps in the clamp-holes mentioned would have held the wall together and kept the faces vertical, as in the two cases quoted and in the upright slabs of the Grave Circle. The positions of the clamp-holes show that the joints of the wall were 'broken', a sign of correct construction. The blocks of the second type, which are longer and wider than the others, seem to have been designed as coping blocks to cover a wall built with two faces as just described. Blocks of both types were used for the blocking wall across the east end of the dromos and at the east ends of the dromos walls. In these walls the blocks are clearly not in their original positions, but are re-used, for the clamp-holes there have no purpose. Three blocks of the pedimental type have long lain near the entrance to the dromos, but where, when, or how they were found is not known. In any case the re-use of some of the *poros* blocks in the blocking wall at the entrance of the dromos, and at the end of the dromos walls suggests that they came from some building that preceded the tomb. This is confirmed by the positions in which the blocks found in 1939 were discovered. They lay in complete disorder thrown over the edges of the retaining walls. They would appear to have been removed from some building that stood where the dome of the Treasury was erected, and was destroyed to make way for it. The *poros* blocks from it were then thrown away as useless material because hard, not soft, stone was required for the Treasury of Atreus. The *poros* comes from quarries on the hill called Magoula at Priphitani, about thirty minutes' walk south of Mycenae, where there are traces of Mycenaean habitation and a cemetery of chamber tombs. The cutting on the blocks is so fresh that they cannot have been long exposed to the weather, and so the building to which they belonged cannot have been long in existence before it was destroyed. The age of ashlar work in

THE TREASURY OF ATREUS

poros in the beehive-tombs is the second group which dates from the fifteenth century. Thus the suggestion that these *poros* blocks belonged to some building of the fifteenth century, removed to make room for the Treasury, agrees with the fourteenth century date determined for the construction of the tomb. What that building was may be revealed when the excavations are continued. The wall from which the *poros* blocks came may have been a monumental wall surrounding the court of a great house or palace, like the court wall of Odysseus' palace in Homer, or perhaps the enclosing wall of a temenos or shrine.

This and other points will undoubtedly be elucidated by the continuation of the excavations when the time comes. Still it seems clear that the excavations of 1939 have been conclusive as regards the date of the Treasury of Atreus, and very beneficial in clearing away much of the smoke screen of theory which has been allowed to obscure our knowledge of the history of Mycenaean culture. It is indeed fitting that the Treasury of Atreus, one of the greatest architectural monuments of Greece, should prove the decisive factor, but in all research about its construction, its date, or its place in the evolution of Mycenaean civilization, its wonderful artistry should not be overlooked. That unknown master of the Bronze Age who conceived and created it was as bold a designer and as able an engineer as any great architect of historic times. His artistic instinct planned the perfect proportions. His engineering skill calculated thrusts and stresses and how to counteract them, and with his knowledge of materials brought the great design to triumphant completion. Archaeology here leads us to a fuller appreciation of a true artist.

Roses in Antiquity

by W. L. CARTER

ONE of the many pitfalls encountered in the search for evidence of roses in ancient times is the use of the word 'rose' in connexion with flowers having no association whatever with roses, e.g. the Rose of Jericho and the Rose of Sharon. This is particularly true of references in the Old Testament, although some of them, notably in Ecclesiasticus, Wisdom of Solomon and Esdras, undoubtedly refer to the rose and rose bushes. Wild roses flourish in Palestine, an attractive type being *Rosa phoenicea*, whose clusters of creamy-white bloom are sufficiently striking to invite attention. This rose would be known to the ancients, for it is found scattered in numerous localities in the Troad and Syria. It is, of course, impossible to record with reasonable certainty the full tale of roses with which the ancient world was familiar, but sufficient sources of information remain to enable a fair appraisal to be made. Some of the roses have stayed in cultivation down the centuries, and are still grown in gardens. Others, such as the 'twice-blooming' roses of Paestum, have vanished, and an exact description is impossible.

The oldest known rose is *Rosa centifolia*, the 'hundred-leaved' rose of ancient writers. It is the Cabbage rose of cottage gardens, whose large silvery-pink blooms are full of petals. This rose is strongly, if delicately, fragrant with a sweet perfume, and is usually adopted as the standard by which all scented roses are classified. It flourished in the earliest recorded rose garden—that of Midas, son of Gordias, the first known patron of the rose. Herodotus says that in this garden were 'roses which grew of themselves, so sweet that no others can come near them, and with blooms that have as many as sixty petals apiece'. The garden of Midas was famous throughout the classical world and must have been a place of astonishing beauty, for we find Tertullian describing an earthly paradise as finer than the orchards of Alcinous and the rose garden of Midas. *R. centifolia* was one of the very few naturally occurring double flowers grown in ancient gardens. Midas's

ROSES IN ANTIQUITY

rose garden would seem to have been flourishing in the time of Herodotus, who probably visited it. It was reputed as being within sight of Mount Olympus, and over some years I made several visits to the site in an endeavour to ascertain whether any survivals of ancient flowers were still in existence. There was no trace of *R. centifolia*, but two interesting wild roses flourished near the legendary site. One was an attractive low-growing bush resembling a hybrid of the Burnet rose of Scottish shores and sandhills. It was a tangle of spiny shoots bearing many little double creamy flowers. The second was a dwarf bush with small semi-single white blooms having a sweet fragrance, possibly an Alba hybrid. A local form of the dog rose with fairly large bright pink single blooms intertwined its trails within a thicket of thorny bushes. Probably this is the 'Cynosbatus' rose of early writers.

R. centifolia was well known in the district around Philippi, where Theophrastus saw it growing. Pliny says this rose grew 'wild' in Campania, and he goes so far as to identify the flowers with those mentioned by Theophrastus. However, the Roman seems to base his notes on those of the earlier Greek, although the pair differ as to the average number of petals in the flower of the Cabbage rose, the Greek giving one hundred—hence the name *centifolia*—with Pliny contenting himself with sixty. *R. centifolia* is not the ancient rose of Campania, which is described as an early-flowering type and ranking equal in beauty with the late-blooming roses of Praeneste. There has been endless speculation as to the origin of *R. centifolia* but entirely without convincing result, the advocates of the garden-origin theory being unable to disturb the upholders of its acceptance as a true wild rose, whose original habitat lay in the Caucasus. The Moss rose, really *R. centifolia* var. *muscosa*, is of comparatively recent occurrence, and originated about the opening of the 18th century.

One of the puzzling problems of ancient roses is that of the flowers mentioned by Sappho of Lesbos. Her reference 2500 years ago to roses that 'lifted themselves up' is curious, for none of the recorded roses of the ancients would do this, except perhaps one or two of the single-flowered species, and these would hardly attract the attention of one of Sappho's standing. Such roses as *R. centifolia* are loose bushes with shoots that arch beneath the weight of individual blooms, and the stems bearing these heavy flowers are what is today called 'weak-necked'. The Sappho roses were distinct from anything hitherto recorded. They were strongly fragrant, and it seems likely

ANTIQUITY

they were a lost form of the Damask or Gallica rose. Or perhaps they were a local Eastern Mediterranean form of *R. alba*, some of whose oldest surviving hybrids are upright bushes bearing some of the most fragrant roses now found in gardens. No ancient roses flourish today on modern Mitylene, Sappho's Lesbos, although many newer kinds thrive so well there that one cannot doubt the island must have been a congenial home to the roses Sappho saw growing there.

The roses of ancient Egypt were not more than two in number, and possibly only one. There is ample evidence to show the importance of the garden in Egypt—the 'Gardener's' tomb, Akhnaton's ruined palace at Tell el Amarna, and others. Some of these gardens, notably those of Rameses II, Rameses III, Thothmes III, and Amenophis III, were on an immense scale, but although a great variety of brightly-hued blossoms flourished in these ancient pleasure and sacred gardens, there is never a mention or depiction of roses. During the Roman occupation roses were grown on a basis of thousands of bushes, but before that—and then not earlier than the Ptolemaic period—the rose is not known. In the time of the Ptolemies roses are found in use as small funerary chaplets. From this it would seem they were cultivated solely for use in mortuary ceremonial. A chaplet or small garland of nine roses found by Flinders Petrie in a burial at Hownra (c. 300 B.C.) proved to be those of a species belonging to the Gallica family (PLATE I). About a century ago, in the Tigre area of Abyssinia, two French explorers, MM. Petit and Quartin-Dillon, found this rose flourishing in temple precincts. It was given the name of *Rosa sancta*, by which it is still known. It is a somewhat dwarf bush, moderately thorny, with dull green foliage and large single pink flowers whose centres contrast brightly with their golden stamens. The rose has also been found growing in Abyssinia at altitudes above 5000 feet.

Rosa sancta probably came to Egypt by way of Nubia, whose centuries-old association with the land of the Pharaohs would permit of traffic of such a peaceful nature. If so, the rose must have been grown in gardens, wherein lies the snag, for the Egyptians went to much trouble in reproducing pictures of the various flowers, aquatics, etc., that were found in their gardens, and it is strange they should omit so obvious an attraction as the rose. It might be that this rose was first grown in Egypt and its cultivation extended to Nubia. When it fell out of cultivation in the land of the Nile, for some unknown reason, specimens remained in Nubia, and the 'Sacred Rose' could easily have escaped into the wild state. As a fixed species, its seeds would

ROSES IN ANTIQUITY

come true to type on germination, and they might readily be spread over the country by the agency of birds.

Another Abyssinian rose (PLATE II)—its native name is Kosso—a most beautiful climbing form of our creamy-white Musk rose with many clusters, appears to have been quite unknown to the gardeners of ancient Egypt. Apparently it never reached Nubia, for such enthusiastic patrons of flowering plants as were some of the Pharaohs were not likely to overlook so lovely a climbing rose had they been aware of its existence.

Theophrastus is an interesting writer from the classical rose point of view. It is clear he was a practical gardener and no mere theorist on the subject of flowers. He mentions few roses by name, although he does say the roses of Cyrene were the 'sweetest', i.e. most fragrant, but he refers to oleanders of rose colour. The oleander of ancient Greece and the Near East had blooms of pale rosy pink. He says, too, that there were roses with five petals, others possessing twelve or twenty, while roses having a hundred petals were grown. In addition, some were devoid of fragrance and the roses he knew differed in colour and perfume. From these short details it is obvious the first section comprised single roses, probably of the Canina type, which included the 'Cynorrhodon' rose, the *Rosa sylvatica* or *sylvestris* of the ancients. It is, I think, identical with the Bramble rose of Pliny. Theophrastus' second group appears to have been composed of semi-single forms, i.e. those having two rows of petals. There are several old-fashioned roses of this type and a few species with similar flowers still in cultivation. The last section contains fully double roses. Of garden forms known to Theophrastus, I think we may go so far as to say he knew *R. centifolia*, which may have varied slightly in colouring, a Damask rose, and possibly a semi-double form of *R. alba* with a clean refreshing fragrance. I hesitate to include the Gallica rose or any of its varieties, for these are shades ranging from bright red to deepest purple, and no ancient writer mentions anything so outstanding. It is unfortunate that early poets like Anacreon did not provide more detail of the roses their verses praised.

Twelve varieties of roses are given by Pliny, but not all can be identified with approach to certainty. His *Cyrinae* is doubtless the same as Theophrastus' Rose of Cyrene and is termed the 'best scented'. I think this is a Damask rose of a soft pink shade (PLATE III). According to the Greek writer, this rose does not bloom until the anemones and narcissus are past, and I have seen light pink Damask roses blooming

ANTIQUITY

near Aleppo and other places in the Near East. They were of a particularly 'obsolete' type and did not begin to flower until the wild anemones had ceased blooming. They were strongly fragrant. It has been suggested that this was also the rose of Paestum (Poseidonia), and remains of it have been found at Pompeii where the only rose depicted in the wall paintings is a Damask. These Paestum roses, the *biferi rosaria Paesti* of Virgil, were famed throughout Roman Italy by their peculiarity of blooming twice in a season. Many modern roses do this almost as a matter of course, but, as those who grow the beautiful Centifolias, Albas, Damask and Gallica roses know, old varieties flower once only in a season. A twice-blooming rose was sufficient of an outstanding novelty to attract considerable attention.

Pliny's Carthage rose which he noted as a winter-flowering kind was probably also a Damask rose, although it may have been identical with the Paestum roses, for it would be much more free-flowering in the genial climate of Carthage. What is usually accepted as the Damask rose today has flattish light red or deep pink flowers, but there is no proof that this is the original Damask rose as known by the ancients, and (although rare) white, light pink, deep red and other forms still exist, including some striped and blotched kinds, one of which is known today as 'York and Lancaster'. This last has no connexion with either the Wars of the Roses or with the two counties, but is a centuries-old Damask rose of unknown origin and may well have been grown in classical gardens.

The 'Mt. Pagenus' rose of Pliny would appear to be the same as the roses found wild on Mt. Pangaeus during Theophrastus' day. The digging up of flowering plants was just as much practised in the time of the old Greek writers as nowadays, for we are told the roses of Philippi were taken from the adjacent mountain where 'they were abundant', and replanted in local gardens. These roses were of a semi-double type, with very small inner petals.

Other interesting ancient roses included the late-blooming Rose of Miletus, which is stated to have had twelve petals, the flowers being a brilliant red. I think it must be accepted this was a Gallica rose, for, apart from the small number of petals, a Centifolia form with really clear red blooms is unknown, and the Alba groups are ruled out. Of course, we may be dealing with a rose of an extinct type but that is hardly likely. Pliny's Graecula rose, of which he said the buds were 'not opening', is a kind familiar to rose collectors. The buds are so full of petals and develop so slowly that frequently they 'ball', i.e.

ROSES IN ANTIQUITY

the outer petals become 'set' by stress of weather and refuse to open. This prevents growth inside and the buds usually decay and fall off.

This is hardly the place for a notice of rose culture in ancient Rome, where it was a flourishing business, quite as well developed within limits as the commercial flower production of today. The three main centres were at Paestum, Tibur and Praeneste, the last apparently having raised a variety of its own, said to be the latest-blooming of all the roses then in cultivation.

There is, however, a type of rose about which very little is known in ancient times; it is of a colour so common among the roses of today. This is the yellow rose (PLATE IV), probably the Austrian briar, *Rosa foetida*, and possibly also *Rosa hemisphaerica*, the so-called climbing yellow Cabbage rose which is not a form of *R. centifolia* at all—which is usually considered to have come to Europe through Persia, and thence from North Africa into Spain, being carried there during the Moorish occupation. There are certain indications of yellow roses in the ancient world, but unfortunately, with this colour being conventionalized, it is doubtful whether a real rose is being shown in any reproduction. So far as I am aware, the oldest 'picture' of a yellow rose in the Near East occurs at Knossos in Crete and dates, I think, from about 1550 B.C. This rose—as shown in the House of Frescoes—is a formalized one with single blooms of six petals. The fact that six petals are shown instead of five seems to indicate that the artist was not reproducing from the actual bloom, but from a fanciful whim of his own; but he certainly had a nodding acquaintance with roses, for on the fresco the shapes of the flower, stem and leaves are those of a true rose. The colour is a clear golden yellow, with a deeper centre spotted dark red. There are spotted forms among the Gallicas, but yellow is quite unknown among the roses of this family. It is true that Palladius refers to a bright yellow rose and Columella to a 'dark' yellow one, but there is no real proof that any such roses were in cultivation, if indeed they were more than mere flights of fanciful anticipation.

Yellow roses of a formal type—they had five petals—formed part of the decoration of bright pink silken apparel found in a 3rd-century tomb in Egypt. Remains of buds and petals of *R. sancta* were also discovered. There is nothing to show that yellow roses were being grown, although so late as the 3rd century other roses were cultivated in Egypt. There is, of course, the ever-present possibility that modern archaeological investigation may make discoveries which will throw

ANTIQUITY

additional light on the roses of the ancient world. So far as yellow forms are concerned, this would make a most welcome addition to our somewhat scant knowledge of early roses.

At the same time it must not be overlooked that some of the oldest roses, particularly *RR. centifolia*, *gallica*, *damascena* and *alba*, are ancestors of the modern roses. Indeed, the 'blood' of those four species is to be found in almost every bedding rose grown in our gardens today. Our rose gardens are merely the 20th century consequence of that first recorded ancient Greek rose garden fashioned by Midas.

PLATE I



A VERY OLD FORM OF THE *GALLICA* ROSE WHICH MAY WELL HAVE BEEN GROWN IN ROMAN GARDENS. THE STRIPES AND BLOTCHINGS ARE RED ON A WHITE GROUND AND OF A TYPE NOT SEEN ON ROSES TODAY (see p. 252)

Plates 1-IV, Ph. Reginald A. Malby and Co. (copyright)

PLATE II



ROSA MOSCHATA VAR. *ABYSSINICA*, THE 'KOSSO' ROSE OF THE ETHIOPIANS
(see p. 253)

PLATE III



A VERY OLD FORM OF *ROSA DAMASCENA*, THE DAMASK ROSE OF THE ANCIENTS
(see p. 253)

PLATE IV



ROSA 'LUTEA' (or *FOETIDA*), THE 'AUSTRIAN' BRIAR FOUND WILD IN PERSIA AND
THOUGHT TO BE THE FIRST YELLOW ROSE TO BE BROUGHT INTO THE NEAR EAST
(see p. 255)

Greek Board-Games

by R. G. AUSTIN

THE study of Greek board-games is almost wholly inconclusive, owing to the scanty and extremely imprecise evidence available. Difficulties would in any case be inevitable, since most games are better grasped in actual play than by studying a set of written rules ; and here the technicalities are expressed in a foreign language and were sometimes not clear even to their users, who cheerfully omit what they do not understand, or take it for granted that the reader is familiar with the main details. Further, the games so described by our authorities had often been long obsolete. Some of the difficulties may be realized by trying to reconstruct a game of Ombre entirely from Pope's *Rape of the Lock*, or a game of cricket from Dickens' account of All Muggleton v. Dingley Dell (even with the help of Mr A. G. Macdonell's searching critique of that famous match). Here is an example of a rather different kind, which well shows the pitfalls of unfamiliar terminology ; it is translated from K. Silex's *John Bull zu Hause*, and is an attempt to explain cricket to Germans. 'Two teams of 11 men oppose each other ; two "wickets" are set [how?] in the ground at a distance of 20 metres, being three wooden sticks [how high?], over which two rods (*Stäbe*) are laid [how?]. The aim is to hit the wicket with a ball [how big?] or to knock off the rods with it. One side defends the wicket, the other attacks ; the defenders post before each wicket [where?] a "batsman" with a striker (*Schläger*) : the other side opposes him with a "bowler" who tries to hit the wicket with the ball [how?]. Two men only of the defence are in actual play, the rest wait their turn' . . . etc. Apart from the ambiguities already hinted at, the nature of the bails is not explained, the bat is described by a word which may also mean a tennis-racket or a croquet-mallet, while one might well infer that the non-batting members of the 'defence' (itself an odd term) are lined up near the wicket anxiously awaiting their turn. This is just the kind of thing that confronts the would-be student of Greek board-games.

Further complications have been caused by the reckless use of

ANTIQUITY

modern terminology in accounts of these games, by the indiscriminate equating of Greek with Roman games, and by the convenient but unjustified application of the rules of one game to suit another. Thus, the Roman *latrunculi* or the Greek *πetteia* ('petteia') have commonly been translated 'chess', which is impossible and utterly misleading (even 'draughts', though less misleading in certain cases, is historically anachronistic). A notorious passage of Isidore (xviii, 60 ff.) has been ruthlessly adduced to illustrate such entirely diverse games as *latrunculi* and *xii scripta*,¹ and to prove differentiation of pieces, quite baselessly. *Latrunculi* has been loosely regarded as invariably equivalent to 'petteia'; special markings have been assumed to exist on the boards, or special powers ascribed to certain pieces, without a shred of evidence. Sometimes an ancient authority is at fault, as for instance when the scholiast to Theocritus vi, 18, writing when a knowledge of chess had spread from the East, uses the word *ξατρίκιον* in connexion with 'petteia'—with disastrous results, as Cholmeley's note on the passage unconsciously shows. But the blame lies more with modern writers, whose zeal for reconstruction so often outruns scholarly method; this lack of discrimination vitiates nearly all modern discussions, such as the elaborate *Jeux des Anciens* of Becq de Fouquières (Paris, 1869), or the various articles in Daremberg and Saglio's *Dictionnaire des Antiquités*, to say nothing of such pretentious works as E. Falkener's *Games ancient and oriental and how to play them* (London, 1892), or H. Coleridge's *Essay on Greek and Roman Chess*.² These methods merely madden; extreme caution should be used, and ignorance cheerfully confessed. The sane way of approach has been shown more recently by Hans Lamer in his monumental article *Lusoria Tabula* in Pauly-Wissowa's *Realencyclopädie*, and by the late S. G. Owen in some of his notes (too brief, unfortunately, especially on the Greek side) on Ovid, *Tristia* II. My purpose here is simply to restate and perhaps help to clarify certain obscurities, without any dogmatic divination or misplaced ingenuity.

Two points have hitherto received insufficient consideration: (a) the probable form of these games, in the light of the characteristic *types* of game which from earliest times have amused mankind in an idle hour all over the world; (b) the relative weight of our authorities, in view of the fact that games develop or become obsolete with time.

¹ See *Greece and Rome*, iv, pp. 24 ff., 76 ff.

² In an appendix to D. Forbes' *History of Chess* (London, 1860).

GREEK BOARD-GAMES

The simplest board-games of most countries are based on three primitive activities of man—the battle, the race, and the hunt—modern types of which are chess, backgammon, and fox-and-geese. Such types one would expect to find among the Greek games; just as the Roman *latrunculi* was clearly a battle-game and XII *scripta* a race-game. Only if a game conforms to such generic types is it safe to make assumptions concerning its method of play, or to identify it with a game of another country. The object of the battle-game is to hem in one's opponents and drive them off the board; no specified number of men or size of board is needed, and in the earliest forms of the game there is no differentiation of pieces; no dice are used. In the race-game, the aim is to bring one's men to an appointed terminus and so be first off the board; again there is no differentiation, but the number of men is fixed, usually 15 on each side; dice are used to control moves. In the hunt, a single piece tries to escape from an opposing pack; no Greek or Roman game seems to have been of this type, which was common, however, in Scandinavia and among the early Celts.

Secondly, the natural development of games and changes in their fashions necessitate close scrutiny of our authorities. Such a development may be seen in the Roman game XII *scripta*—a race-game, played on a board with three tracks, as can be reasonably inferred by correlating certain passages of Ovid with numerous existing boards or diagrams.³ For later a quicker game was evolved by eliminating the middle track, resulting in the Byzantine *tabula* or τὰβλῆ, to which Isidore (xviii, 60 ff.) refers. An actual position of this game has been recovered from an epigram of Agathias in *Anth. Pal.* ix, 482⁴; yet if we applied this evidence to the earlier game we could hardly expect good results. Again, one type of game may oust another in course of time, and the earlier one will be forgotten or imperfectly understood. Thus the relative dates of our authorities, and their possible interdependence, become of primary importance.

The Greek evidence falls into two groups: (a) casual references in literature, from Homer downwards; (b) the accounts of the antiquaries Pollux, Hesychius, Suidas and others, together with the long statement made by Eustathius in his Homeric commentaries. The difficulties offered by the second group are obvious; for long ago Casaubon pointed out that Eustathius' account is based on the lost

³ *Greece and Rome*, iv, 30 ff.

⁴ *Greece and Rome*, iv, 76 ff.; *Journal of Hellenic Studies*, liv, 202 ff.; cf. H. Jackson, *Journal of Philology*, vii, 240 ff.

ANTIQUITY

work of Suetonius *περὶ Ἑλληνικῆς παιδιᾶς*, written perhaps in Greek, perhaps in Latin. It is doubtful if we can ever settle the interdependence of these writers, of whom the earliest is Pollux, or their relationship with Suetonius, a senior contemporary of Pollux. Reifferscheid, in his edition of the Suetonian fragments (Leipzig, 1860), thinks that both Suetonius and Pollux may derive from a common original; Lamer boldly regards Suetonius' lost book as the source of all the existing Greek evidence, except for a part of Eustathius which is definitely taken from Athenaeus. At least it is clear that our evidence for the Greek games rests mainly on the work of Pollux, a 2nd century Egyptian Greek who was acquainted with Rome, and on the excerpts made by the 12th-century Byzantine Greek Eustathius from the lost work of the Roman antiquary Suetonius: therefore, none of it is really pure Greek. Has Eustathius reported Suetonius intelligently, and how far are his descriptions coloured with the terminology of his own day? Did Suetonius himself really understand the Greek games of which he wrote? The very nature of these sources is itself abundant ground for expecting no conclusive results. Neither can such archaeological finds as exist be demonstrably related with known games. By contrast, the evidence for Roman games is like daylight, backed up as it is by the existence of undoubtedly related diagrams.⁵ The study of the Greek games is, in fact, a journey into complete darkness.

At the outset the term 'petteia' needs clarification: it is a game played with *πessoί* ('pessoι', i.e. 'pieces' or 'men'), but is the expression generic, or does it always imply one particular game? The former interpretation seems preferable, and considerable confusion has arisen from assuming that it means one game to the exclusion of others. References to games with 'pessoι' begin with Homer, and continue throughout Greek literature down to the lexicographers and Eustathius; one such game was called *πόλεις* ('poleis', i.e. 'cities'), but the same terminology is used also of others which were certainly not identical, and it seems only reasonable to regard 'petteia' as a generic term for 'a board-game' in general. Sometimes 'pessoι' are spoken of together with *κύβοι* ('kuboi', i.e. 'dice'), and such a combination might well mean a race-game and not a game of pure skill, but this can seldom be determined. The game with dice was called *κυβεία* ('kubēia'), and its meaning will be considered shortly. Plato

⁵ *Greece and Rome*, loc. cit.; a fairly well-preserved specimen of a Roman XII *scripta* board is in the Holt collection of the National Museum of Wales at Cardiff (see W. F. Grimes, *Y Cymmrodor*, xli, 131; R. G. Austin, *Archaeologia Cambrensis*, xciii, 250).

GREEK BOARD-GAMES

assigns an Egyptian origin both to 'petteia' and 'kubeia' (*Phaedr.* 274d), probably rightly; it is he who first regards 'petteia' as a science (RP 333b), and he adds some valuable details of one form of it in RP 487b, where Socrates' victims, who are finally cornered and made helpless by dialectic, are compared to 'bad petteia-players, who are finally cornered and made unable to move by clever ones'. In RP 374d, both 'petteia' and 'kubeia' are said to involve long training if skill is to be achieved. Plato clearly dissociates 'petteia' from 'kubeia', i.e. he distinguishes it from a dice-game, and this is borne out by the language which he uses. For he obviously has in mind not a race but a battle, where the enemy is blockaded until he is beaten; similar expressions are used later of Scipio by Polybius (I, 84)—'he destroyed many men without a battle by cutting them off and blockading them, like a clever petteia-player'. This particular game may well have been that known as 'cities', of which more will be said later; but we are not justified in applying the rules for other forms of 'petteia' to it—e.g. because we know of a technicality called *ἱερὰ γραμμή* ('the sacred line') in connexion with one form of 'petteia', we cannot therefore assume its presence in 'cities', as is done for instance by Sir D'Arcy Thompson in a paper which will be mentioned again. It would be absurd if some remote investigator, misled by the prevalent Scotch habit of referring to the Association code exclusively as 'football', were to assume either that Rugby is not football, or to transfer to Association some of the rules peculiar to Rugby. A reasonable conclusion is that 'petteia' was not a particular game, but a generic expression for a game probably of the battle-type and played without dice.

We must now consider the term 'kubeia'. Probably this long meant merely one of the various methods of dicing; but when we come to Pollux and the later lexicographers, it is constantly used of a board-game in which movement is controlled by dice, i.e. a race-game of the backgammon type; and it is precisely its application to games of the battle-type that causes inevitable confusion. At first sight the position would seem clear enough in view of the plain statement of Hesychius (s.v. *πεσσὺ πεντέγραμμα*), that 'petteia' differs from 'kubeia', for 'in the latter the players throw dice, in the former they only move the pieces'; and elsewhere Hesychius contrasts 'petteia' with 'kubeia' as being a game of skill opposed to one of hazard. But all this apparent clarity is completely inspissated by a second statement, in which he explains 'petteia' as 'a game with dice' (*διὰ κύβων παιδιά*),

ANTIQUITY

and by other similar glosses. Turning to Eustathius, we learn that 'in ancient times' a clear distinction between the two was made: 'kuboi', he says, are six-sided dice, while 'pessoi' are 'something different' (ὁ πεσσὸς ἑτεροῖόν τι ἐστίν); he then quotes a line of Sophocles to clinch his point, which in fact proves nothing at all. It is clear enough that by Eustathius' time the proper meaning of 'petteia' and 'pessoi' was not known, and the two were taken as some antique variant of 'kubeia' and 'kuboi', there being some unexplained distinction between the two. The cat is finally let out of the bag when Eustathius goes on to explain πεττεύειν ('to play at petteia') by using the word ταυλίζειν ('to play at τάβλη or *tabula*'): this term (or ταβλίζειν as it appears elsewhere) was the Byzantine word for the race-game then current, as played by the Emperor Zeno in Agathias' epigram already mentioned—demonstrably a backgammon-game, played with dice, a modification of the Roman XII *scripta*. In fact, Eustathius sees in 'petteia' simply a form of the principal board-game in vogue at his time, in much the same way as modern writers have equated it with chess; he does not really understand the term at all.

Clearly then Suetonius' late copyists have identified 'petteia' indiscriminately with 'kubeia'. Hesychius, who lived much earlier than Eustathius, is not quite so vague; he has hit upon a lucid differentiation between the two, yet abandons it for an explanation which better suits the games of his own day, probably because a board-game without dice was not readily comprehensible to him. For Hesychius too uses the word ταυλίζειν in one of his glosses. The confusion appears as early as the 4th century in Joannes Chrysostomus (XI, 970), and in fact, earlier still we find Pollux himself equally vague: in one passage (IX, 97) he realizes that there is somehow a difference between 'petteia' and 'kubeia', in another (VII, 203) he appears to include the former term under the head of the latter. It is significant too that Pollux uses 'kubeia' occasionally in speaking of games which from his own description cannot possibly have involved the use of dice, e.g. χαλκισμός (spinning a coin) and ἵμαντελιγμός (a game played with a knotted strap). The word was evidently the familiar term of his day for games of hazard in general, and he is apt to use the expression 'a species of kubeia' (εἶδος κυβείας) as a convenient formula for all sorts of games.

It seems evident that when the lexicographers and Eustathius use the term 'kubeia' in referring to board-games, they are merely employing the terminology of their own day, and that the proper sense

GREEK BOARD-GAMES

of 'petteia' was lost. An analogous development can be seen in Latin; *alea*,⁶ the Latin equivalent of 'kubeia', is used at least once by Macrobius (late 4th century or early 5th) of a game which obviously did not need dice—the Roman sport of *capita aut navia*, 'heads or tails', described as *aleae lusus*. This suggests another possible source for confusion; for if our authorities depend ultimately on Suetonius, and if Suetonius' book was written in Latin, they may well have been misled by some ambiguity of language like the example just quoted from Macrobius: e.g. the natural Latin word for the board would be *tabula*, a word which to Hesychius and Eustathius at least would convey the meaning not of a board but of a particular *game*, the race-game *τάβλη* played with dice (so Isidore l.c. writes 'tabula luditur pyrgo, calculis tesserisque'). On the other hand, if Suetonius wrote his book in Greek, as some scholars hold, it is plain enough that even if he himself used the terms 'petteia' and 'kubeia' correctly, his copyists (including the nearly contemporary Pollux) did not understand the distinction.

To sum up so far: both 'petteia' and 'kubeia' seem to have been generic terms; the former meant a battle-game or games, the latter, after losing its original sense of dicing, became applied to a race-game; as the latter type of game became more popular, the true sense of 'petteia' was forgotten, and 'kubeia' was applied to any board-game indiscriminately. This somewhat tedious linguistic discussion has been necessary to show that when Pollux and the rest refer to a game as a 'species of kubeia' we must not take it at its face value as implying a race-game played with dice. We should remember that none of these authorities had practical knowledge of these games; even Pollux uses a past tense regularly in speaking of them, or makes it plain that he writes from hearsay.

Let us now examine the three board-games whose names we know, or think we know. One is 'poleis' ('cities'), of which Pollux says (ix, 98) 'the game played with many pieces is a board (*παιθιον*) with spaces disposed among lines; the board is called "city" and each piece a "dog" (*κύων*); the pieces are of two colours, and the art of the game consists in taking a piece of one colour by enclosing it between two of the other colour'. He then quotes an obscure reference to it from Cratinus (5th century B.C.). This description looks as if Pollux really knew something of the game. Eustathius (*Od.* i, 107 ff.) has a substantially similar account, but much vaguer, and he calls the game 'a

⁶ i.e. 'a die', but later used of a board-game with dice.

ANTIQUITY

species of *kubeia*’; he explains the term ‘cities’ as the old name for the spaces on the board. We can at once discredit the idea that it was a dice-game and therefore of the backgammon type, for the reasons which have been given above.⁷ It is quite clearly a battle-game, almost certainly the form of ‘*petteia*’ described with military terminology by Plato and Polybius. Here it is worth recording that the word *πλινθίων* is used by Arrian and Josephus of a column or mass of troops, a fact not hitherto pointed out in connexion with the game; this supports the battle theory. And if the game itself was really known sometimes as *πλινθίων*, as Pollux appears to suggest, here is a fruitful source of confusion; for if Suetonius had chanced to use the obvious Latin word *tabula* or *tabella* to translate the Greek term, we should then definitely have had a word used of the battle-game which later became identified with the race-game.

The method of capture shows that the game was analogous with the Roman battle-game of *latrunculi* (cf. Ovid *AA*, III, 358, *Tr.* II, 478); it is one of the oldest known, and is found in games played in Malaya, Siam, China, Arabia, and Egypt; it obtained in a Persian game mentioned in Firdausi’s *Shahnama*, as well as in the old Norse game of *Hnefa-tafl* and others of the same family (although there the game was a hunt rather than a fight, a kind of fox-and-geese).⁸ It is a certain clue to the nature of the game. The number of men is indeterminate, another feature of the type—it varies with the size of the board; Photius states that in ‘cities’ sixty pieces were used, presumably 30 on each side, though this seems rather large. We may legitimately assume that what is known in chess as the Rook’s move was used, as in all other games of this family, for it can be demonstrated that no shorter move alone will give a playable game; there may be a hint of this in *latrunculi*, and as the Roman game allowed backward moves, ‘cities’ may have done so too. The tactics consisted in preventing the enemy from maintaining his massed formation, and by breaking through it to manoeuvre until his force was gradually scattered and so taken. An isolated man brought danger to himself and to his side. These are legitimate inferences from what we know of the Roman game and others of the family.

⁷ I must here withdraw a too hasty footnote to my paper in *Greece and Rome*, IV, 25, in which I put over-credulous belief in Eustathius and denied that ‘*poleis*’ was akin to the Roman *latrunculi*.

⁸ I owe this and other information, together with much helpful criticism, to Mr H. J. R. Murray, author of *A History of Chess* (Oxford, 1913).

GREEK BOARD-GAMES

Clearly 'cities' was of respectable antiquity, going back as it does to Cratinus at least. Two well known passages in Plato and Aristotle respectively have it in mind. The first is RP 422e: comparing other states with his ideal state, Plato says 'none of them is one city, but many cities, as they say in the game', on which the scholiast remarks that 'cities' was a form of 'petteia', and that the proverb has come from the game. This is surely a direct reference to the game, not a mere general expression for a jest, as Warren thought; it may perhaps corroborate the use of the term 'poleis' for squares on the board, unless Plato means that the board was divided into two rival 'cities', one for each player. The comparison comes in aptly, for in the context Plato is discussing a *fight* between two cities, and it is probably not coincidence that he has chosen earlier to bring in a reference to 'dogs' (in the literal sense) as taking part in it. The meaning of the proverb is uncertain: perhaps there is a play on the two senses of 'poleis'—'many squares don't make a city', i.e. some wise unifying principle is needed also, to ensure that the forces on the squares are properly co-ordinated; just as Plato says of his ideal state: 'so long as your city is wisely ordered on the principles just laid down, it will be the greatest of all cities'.

The Aristotelian passage is in *Pol.* 1253a: Aristotle compares the cityless man (ἄπολις) to an isolated piece in a game of 'pettoi' (ἄτε περ ἄζυξ ὧν ὅσπερ ἐν πεττοῖς). The curious word ἄζυξ occurs at a much later period in Agathias' epigram on Zeno's game of τὰ βλη, where it means a 'blot' at backgammon, i.e. a single piece standing unguarded by a companion and therefore liable to capture. But the commentators are surely wrong in supposing that Aristotle had the race-game in mind; the word ἄπολις in the context, and the comparison introduced between the 'cityless' man and the pugnacious Homeric warrior (I agree with Jackson in assigning the comparison not to the ἄζυξ but to the ἄπολις) both suggest that he meant the battle-game, 'poleis'. As Newman remarks, there is no reason why ἄζυξ must imply Zeno's game; it could surely apply equally well to a piece in 'poleis' which has become cut off from the main force and so is in danger itself and a danger to others. It is this to which Aristotle compares the 'cityless' man: he resembles a piece which has 'lost its square' or has been 'driven from its polis'. In his note on the passage in Susemihl and Hicks' edition, Jackson sees the force of the comparison, but fails to realize that 'poleis' is a different type of game from backgammon. Newman is more cautious, but unfortunately he afterwards throws caution to the winds,

ANTIQUITY

and follows Becq de Fouquières in dragging in a reference to a 'sacred line' (ἱερὰ γραμμή), which belongs to a quite different game and is never mentioned in connexion with 'poleis'—a good example of the danger of assuming that all these games can be treated indiscriminately.

Another reference to this game occurs in Euripides *Suppl.* 409, where the Theban herald asks Theseus 'Who is the lord of this land'? Theseus rebukes him, saying that Athens has no one ruler, whereupon the herald answers 'You give me this one advantage, as in *pestoi*, for my city is captained by one man, not by a mob', i.e. 'my side is well led, yours is not'. Some editors suppose that the words 'you give me this advantage' imply a privilege conceded by a player to his opponent, but we know nothing of any handicapping principle in any of these games, and it seems unlikely that they bear any meaning other than that suggested above. It can hardly be by accident that the comparison with 'pestoi' introduces a long discussion between the two men on rival theories of conducting a state, democratic v. totalitarian, and there may well be other allusions to the game in what follows. A second Euripidean reference occurs in a fragment of the *Erechtheus* preserved by Plutarch, *de exilio* 604 d: unfortunately the text is doubtful, and it is difficult to get a clear picture of what Euripides has in mind; he appears to compare the indigenous and homogeneous state of Athens to 'other cities' full of immigrants from elsewhere—possibly he is thinking of the ever-changing appearance of a 'poleis'-board, with the men of both sides intermingling according to the play. Sir D'Arcy Thompson thinks that the game implied in the passage was played with dice, i.e. that it was a race-game (this depends to some extent on the reading adopted); but surely the mention of 'cities' must imply the battle-game, 'poleis'.

Such are the chief references to the game of 'poleis'; it was evidently very popular and needed much skill; it obviously appealed to the philosophical mind, as Plato's frequent mention of it shows (the scientific battle-game, with its need for cool logical thinking, would plainly suit the philosopher better than the race-game played with dice). It may well have been this form of 'petteia' to which Philostratus alludes (*Heroica* II, 2) as 'no idle sport, but one full of shrewdness and needing great attention'. Although it must be emphasized that 'petteia' bore no resemblance to chess, it is clear that it needed the same qualities for success as chess does.

A second game is διαγραμμασμός ('diagrammismos'). This unfortunately cannot be identified. Pollux mentions it immediately

GREEK BOARD-GAMES

after his account of 'poleis', but in an ambiguous manner (ix, 97): 'next to (or *close to*—the Greek word used is ἐγγύς) this game is diagrammismos, a game which they used also to call "lines" (γραμμαί)'. It is not possible to tell whether Pollux meant a related game, or simply one next on his list. Certainly Hesychius and Eustathius took it to be a game like 'poleis': Hesychius calls it 'a game of sixty pieces, white and black, moving on spaces'; Eustathius writes (*Il.* vi, 633) 'diagrammismos, a species of kubeia, was played, they say, by means of the sixty black and white pieces on the boards' ("ἐν πλινθίοις"); Philemon mentions this game in the line he topes, he plays diagrammismos, he plays dice" (κυβεύει—which might mean "he plays at kubeia"). As there is nothing here that does not appear in what we know of 'poleis', it would be unsafe to give these details independent weight as evidence for 'diagrammismos'; Hesychius and Eustathius, relying on Pollux' vague word ἐγγύς, may quite well have transferred them bodily from the other game. Elsewhere Pollux (vii, 206) includes 'diagrammismos' in a miscellaneous list of 'species of kubeia', comprising among others two obviously non-dicing games, ἱμαντελιγμός and χαλκισμός; this is not reliable evidence either. If the game was really like 'poleis', and was therefore a battle-game, we cannot take seriously the statements of Pollux and Eustathius that dice were used in it; and Philemon, in his portrait of a rake in the quotation, seems to regard 'playing diagrammismos' as a different form of dissipation from 'playing with dice' (or 'playing kubeia'), although the point cannot be stressed. We cannot really infer anything definite about the game, and it is suspicious that Pollux gives no details. But the names given to it by Pollux, especially the alternative γραμμαί, would seem to point to a quite different type of game from 'poleis'; it might be a real race-game, a genuine 'species of kubeia', if we could regard γραμμαί as something like the Latin *scripta*—then, of course, we must scrap all the details mentioned by Hesychius and Eustathius; or it might even be some form of Merels (Three Men's Morris),⁹ neither a battle-game nor a race-game. It is disappointing that so little certainty is possible.

The third of these Greek board-games is the so-called πέντε γραμμαί or 'five lines'; we do not know its actual name, but this is a convenient way of referring to it. It bristles with difficulties. Pollux describes it thus (ix, 97): 'each of the players had five pieces on five lines, so that Sophocles naturally says "five-lined boards and the

⁹ cf. *Greece and Rome*, iv, 79.

throws of the dice";¹⁰ and of the five lines 'on either side' (?—the Greek word is *ἐκατέρωθεν*, which might perhaps mean "in either direction") there was a middle one called the sacred line, and a player who moved a piece from it gave rise to a proverb "He moves the piece from the sacred line". Eustathius has substantially the same account, but is rather fuller on the 'sacred line': he says 'the beaten player goes to it last (*ἐπ' ἐσχάτην αὐτὴν ἵεται*), whence the proverb "to move the piece from the sacred line", referring to people who are desperate and need final help'; he quotes the proverb in various forms from Sophron, Alcaeus, and Theocritus, showing that the game goes back to a respectable antiquity. Hesychius also refers to the 'sacred line', but does not explain it; Suidas interprets the proverb either metaphorically of sailors in desperate need, or of petteia-players, 'with whom there is a sacred piece'. The scholiast to Plato (*Lg.*, 739a) also speaks of a sacred *piece*, not a *line*, and adds, surprisingly, that it was immovable (*ἀκίνητος*). Pollux mentions the proverb also in an earlier passage (VII, 206), after the list of games which includes 'diagrammismos', apparently as an afterthought; the reading there is uncertain, but there seems no reason for Lamer's tentative suggestion that 'diagrammismos' too had its 'sacred line'.

The obscurity of all this evidence is impenetrable. Sophocles' line, quoted with such triumph both by Pollux and Eustathius, is quite intractable—we cannot tell from it whether dice were used in the game, or whether he is speaking of two different forms of amusement, or even its exact meaning. Again, it is clear from both Pollux and Eustathius that each player had five lines, but do they mean five vertical and five horizontal lines, or two sets of five lines running in the same direction? If the latter, why the name *πεντέγραμμα*? Finally, what was the 'sacred line'? Did it run between two sets of five lines (thus making 11 altogether), or was it the middle one of each set, or can we infer from Eustathius¹¹ that the board did in fact have five lines each way, and that the 'sacred line' was the middle one in each direction? The movement of pieces is also obscure, since we do not know the position or function of the 'sacred line'; Eustathius' language gives no help, and is in fact almost self-contradictory—he probably knew nothing whatever about it, and has invented something to sound impressive.

¹⁰ καὶ πεσσὰ πεντέγραμμα καὶ κύβων βολαί: I have adopted Lamer's suggestion for the obscure phrase *πεσσὰ πεντέγραμμα*.

¹¹ His actual words are obscure enough—*παρετείνετο δὲ αὐτῶν καὶ μέση γραμμή*.

GREEK BOARD-NAMES

No answer seems possible to any of these problems. One difficulty, however, can be safely ignored—the statement that the piece on the ‘sacred line’, the ‘sacred piece’, was immovable; if taken literally, this would make nonsense of the proverb to which all our authorities refer; it must mean, not that such a piece could never be moved, but that at a given position of the game such a piece was for the moment immobilized. Isidore (xviii, 67) uses the Latin *incitus*, the exact equivalent of the Greek ἀκίνητος, in connexion with the game of *tabula*, and this is the rational explanation of it there. It is hard to suppose that the Greek word does not convey the same idea, a fact which might be used to prove that the Greek game, like the Latin *tabula*, was a race-game and a genuine ‘species of kubeia’. But there seems no particular reason to trust the scholiast to Plato any more than anyone else.

Two reconstructions of this game may be mentioned. One is by Becq de Fouquières, based on little more than imagination and good will. He assumes a board of five vertical and five horizontal lines, in itself not impossible to extract from the Greek; he then assumes that the game resembles ‘poleis’, and takes over the military tactics spoken of by Plato and Polybius with reference to ‘petteia’, although the number of pieces used is against the identification; lastly, he invents a special enclosure or square surrounding the point of intersection of the two middle lines, as a kind of sanctuary, protected by the unseen presence of what had originally been a sacred and immovable piece. Assuming that the method of capture was the same as that in ‘poleis’, he claims that this ‘sacred square’ had the power to help in a capture, i.e. that a hostile piece penned in between it and one of your own men could be taken. Such a function, in fact, does belong to a centre square in certain games; Linnaeus saw it employed in a Lapp game of *tablut* in 1742.¹² But it is surely obvious that de Fouquières’ reconstruction of the game on these lines is quite fanciful, for there is not the slightest evidence either that the game resembled ‘poleis’ or that such a special enclosure or sanctuary existed in the middle of the board. If ‘poleis’ had really had a ‘sacred line’, it seems very improbable that Plato would not have made some mention of it. Further, de Fouquières’ account of the moves, although supported by diagrams, is very difficult to follow.

¹² See J. E. Smith, *Lachesis Lapponica*, II, 55–8, a reference which I owe to Mr Murray.

ANTIQUITY

A quite different solution is proposed by Sir D'Arcy Thompson, in a paper already mentioned.¹³ He too calls the game 'poleis', and seems to assume that the rules for different games may be applied to any indiscriminately. He bases his account on an Egyptian game called 'Seega', played on a board whose squares, usually represented by holes in the ground, are set in five rows of five each way. Each player has twelve 'kelbs', i.e. 'dogs'. The central hole is left vacant; otherwise each player arranges his pieces where he likes on the board. When all the men are so entered, movement begins, each piece being allowed to move to the next vacant square, in file or row, but not diagonally. The method of capture is exactly similar to that in 'poleis'—one kelb is taken by being surrounded by two of the opponent's pieces. Possession of the central hole is most important, as its occupation gives the best opportunity of intercepting an enemy piece: 'a piece standing thereon is therefore valuable to the owner, and a special object of the opponent's attack', and so it would not be moved except in dire necessity. Thus the centre hole corresponds to the 'sacred line'.

This is at least a straightforward account based on an actual playable game, not on imagination. But it is based on a misconception, the idea that the game of the 'five lines' is to be identified with 'poleis'. The Greek sources make two quite different games, and the attempted conflation is unsound. The Egyptian game may certainly be of the same family as 'poleis', though the number of pieces used appears to preclude actual identification; the name 'dogs' for the pieces is not conclusive, for it is commonly found in various games throughout Egypt and the East (and occurs for instance in a tenth-century Indian account of the oriental game of Nard, a race-game and so of a different family from 'poleis'). As for identification with πέντε γραμμαί, it may be pointed out that the Egyptian game has 12 pieces, the Greek five, on each side. Further, 'Seega' can also be played on a board of 7 by 7 or 9 by 9 squares; and even if the centre hole in 'Seega' has the importance claimed for it, the fact remains that in the Greek game we have to deal with a 'sacred line', not a 'square'.

We are bound to accept the conclusion that this 'sacred line' is not only in itself an insoluble problem without further evidence, but also precludes identification of the Greek game with any other until its nature can be satisfactorily established. S. G. Owen assumed (Ovid, *Tr.* II, 475) that the game was a race-game, played with dice,

¹³ *The Game of Πόλις* (Glasgow, 1911), kindly sent me by the author.

GREEK BOARD-GAMES

like the Roman XII *scripta* ; the idea of γραμμαί might support this (although ' five lines ' was not necessarily the *name* of the game), and the evidence of the scholiast to Plato, as already stated, might also be quoted ; but the apparent shape of the board, so far as it can be inferred, is against this interpretation, while the age of the game, going back as it does to Alcaeus at least, would seem not to be in favour of a game of hazard ; also, the ' sacred line ' and its function is no more clear in this type of game than it would be in the battle-type. Only archaeological evidence would make identification possible ; but although Lamer thinks that certain boards found at Epidaurus may have been used for this game, the evidence is still very obscure and the mystery of the ' sacred line ' still not cleared up.

Thus the only one of these three games which seems to admit of positive elucidation is ' poleis '. More important to the writer is the method of approach used, in spite of the mainly negative results ; it will be something gained if a few misconceptions can be removed which have hitherto been implicitly accepted as true, and if a possible path has been suggested for future investigators.

Trelleborg

by C. O. SKILBECK

THE wonderful find at Trelleborg near Slagelse in Denmark is all too little known in this country. In fact the name of Trelleborg itself is practically unknown, or confused with the town of the same name in Sweden.

The site is one of the most important earthworks in Denmark. The rampart measures 25 metres in thickness. It lies on the eastern shore of the Great Belt, and as Herr Poul Nörlund, the explorer of the site, himself says of it: 'Trelleborg lies even now so much out of the way that there are few places in the much built-up coast of Vestsjælland which are so difficult to find, with no direct road leading to it'.

It is better to allow Herr Nörlund to tell his story of the discovery as much as possible in his own words. Writing in 1936 in 'National-museets Arbeidsmark' he says:—'when in 1934 arrangements were first made with the landlord of Trelleborg, Herr N. P. Andersen, for permission being given to the National Museum of Denmark to explore the space inside the rampart, it was anticipated that it would only be a matter of a few days' work. But that calculation was far from correct. The work grew and grew'.

In the latter part of the year 1934, we dug for one month, and for three months in 1935, and still very much more remains to be done. It was formerly considered to be a castle of refuge, surrounded by a defensible wall, to which the people of the countryside could flee when the enemy was in the land. Some considered it to have been a market place of the Viking period, of the same character as other Baltic ports of that time; but its position on the confluence of two rivers which were much too narrow to carry long ships, which were up to 20 metres or more in length, was only possible by small boats—Prams—to convey goods right up to the ramparts and further into the country.

A test trench was dug right across the site, which, in the second spit, came to the untouched clay bed. The top soil was some 30-40 centimetres thick, and when this was removed to the yellow clay,



1. EAST GATE OF TRELLEBORG, RESTORED IN 1937



2. GROUND PLAN OF HOUSES, TRELLEBORG, SHOWING POST-HOLES



TRELLEBORG

a number of dark markings were discovered, some large, some small, which in dry weather were not very clearly defined but became deeper in colour after rain. These proved on investigation to be post-holes 10-50 centimetres deep—with occasionally deeper holes up to 2 metres in depth.

The clay bed was most valuable, as it bore the unchanged impression of things laid upon it. The examination of the post-holes brought to light many fragments of different periods—from the Stone, Bronze, and early Iron Age, and from the Viking period. These holes caused much divergence of opinion. At length there were found double rows of them, arranged at one metre's distance from one another, one row with deep oblong holes, possibly for planks, the other with shallow round post-holes, each round hole corresponding to an oblong.

We then found another double row answering to the first, and eventually there appeared the outline of a complete house-foundation of surprising size, in comparison with the largest ancient houses which have previously been found in Denmark, and of most unusual form.

The longer sides were regularly curved, the gable ends being cut off. The total length was 29.5 metres ; the breadth at the gable ends 4.5 metres, gradually increasing to 8 metres in the middle. In the centre was found a stone hearth. The house had partitions made with heavy deep buried planking, divided into a large room in the middle of the building 18 metres long, and two end rooms. The doors which were in the end wall, and both partition walls, except in the middle room which had two outer doors, hung diagonally, close to the partition.

How can the existence of such a house be explained, in the trading centre of Trelleborg, where we should rather look for small traders' dwellings with walls of not more than 2 to 4 metres in length ? This great house upset undeniably the town theory. Of course it might have been a heathen god's house or temple built for merchants.

Already the first test-holes had shown that there were marks of building over the whole of the site, and this was strengthened by the excavations in 1935. Post-holes there were over the whole site, but the question was if there had been several houses, and if so in what form and direction they had been built.

After a thorough examination there was found eventually a similar double track of post-holes to those of the first house. It also was built with a long curved wall, which eventually worked out as a

ANTIQUITY

whole house which was an exact repetition of the first. It was astonishing to find that when the second house was measured it turned out that it not only resembled the first, but was of exactly the same dimensions, viz., 29.5 metres long, 8 metres broad in the widest part, with a similar arrangement of doors and partitions, and of the same construction.

The situation now developed quickly. New hearth stones and new walls appeared; so there were many houses all of similar size and construction. A third house lay beside the latest discovery, with two others at right angles to them. It was clear that there was an orderly plan, in which all the previously discovered holes were explained by the test trenches. A plan of astonishing clearness and regularity was revealed, consisting of 16 houses of the same size and arranged four-square, so that eight gable-ends gave on a central square of about 20 by 20 metres.

We must now consider the construction of these houses; although only post-holes remain, it is nevertheless certain how the houses were constructed. They were wooden buildings of the same character as the old stavekirker, before the time of stone buildings, built in the same primitive manner. The wall planking was set perpendicularly in the earth like palisading. The planks stood close, edge to edge, joined with tongue and groove; presumably every second plank was grooved on both edges.

The plans show two slightly different types: the one with continuous, but not specially deeply set wall timbers, the other with what would seem to be a space between the deeply laid plank-trenches, so that only every second plank is buried deeply between the others which presumably had been thinner having a tongued edge, originally set not so deeply, as now appears, in the clay.

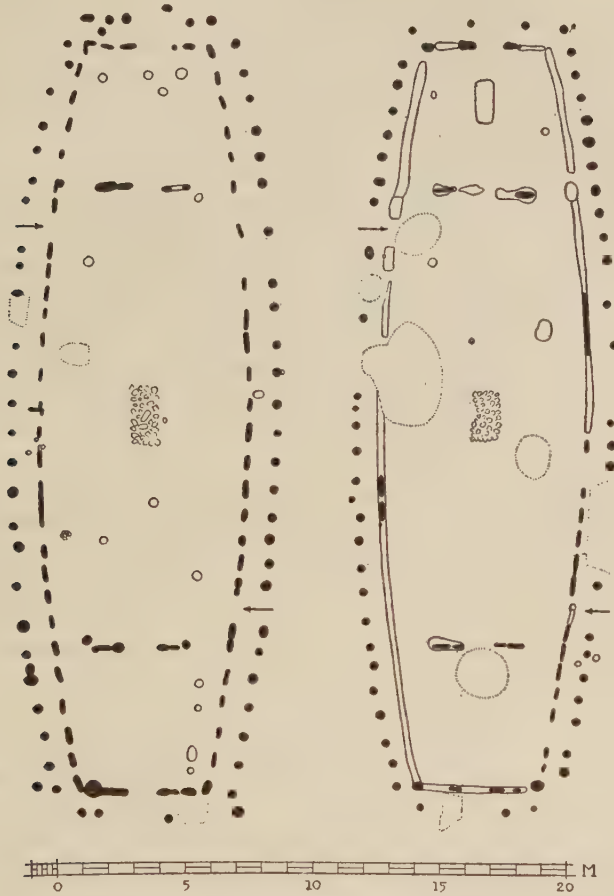
In the close series of post-holes round the outside of the houses, were the upright timbers for the support of the walls; the holes show no inclination, but the timbers may have been curved. The wall would certainly have needed such an extra support as they carried the roof. These supporting timbers could not have carried the roof directly, they were too slight to support such a great weight.

Inside, curiously enough, there was no ridge beam, such as usually exists in old houses. The whole space, which is 18 metres long by 8 metres broad, is constructed and roofed without any supporting timbers whatever.

It is probable that the roof was planked, which seems the only possible construction. The curved walls must have been so constructed

TRELLEBORG

that at the extreme end there was a flat plank wall to counter wind pressure ; but the difficult roof construction necessitated the wall-posts being held together by a running timber—a 'Hammer band' as



GROUND PLAN OF TWO HOUSES AT TRELLEBORG IN THE
SOUTHWEST OF THE QUADRANGLE

The gable ends towards the central square are shown at the bottom of the plan. The positions of the side doors are marked by arrows and remains of houses of an earlier period by dotted lines. From *Fra Nationalmuseets Arbejdsmark*, 1936, p. 62

it is called in timber building language—in the underside of which was a shallow groove into which the upright staves were fixed. Owing to the curving of the walls it was certainly necessary to use many

ANTIQUITY

pieces. On the hammer beams rested cross beams from wall to wall, and on them were raised spars, the side pressure of which was no stronger than to support the rigidity of the roof.

One notices (PLATE, 2) immediately between the two curved house foundations, three lines of holes; such are similarly found between the other pair of houses, the gable ends of which turn inwards towards the centre place. They represent the four main 'streets' of the plan, but what is their significance? Should it be imagined that the streets were roofed in with a roof carried on pillars? Certainly not, because the distance of the rows is about 1 metre from each other, and the houses are built pretty closely together at the four corners of the 'streets', which would make traffic in such a cramped space quite impossible. The holes are moreover too small for such pillars. It must therefore be imagined that they are marks of a wooden platform similar to those of medieval construction in Swedish towns—a platform of close round cloven stakes, such as are sometimes found in our old buildings. These timbers rested upon other timbers laid horizontally, which were supported by posts driven in to prevent sinking; the holes for which still remain.

How near these post-holes approach the ramparts is not yet known; but in the opposite direction they reach just over the central square, where they stop about 5 metres from the actual centre. Here, besides holes belonging to yet earlier buildings, are four large holes arranged in a square at about 3 metres distance from one another and about 30 to 40 centimetres deep, with diameter of 50 to 60 centimetres.

The whole layout is, as it can readily be believed, constructed according to a well devised main plan.

The rampart is a ring some 17 metres thick, with a radius from its inside edge of 68 metres. The thickness of the rampart is about one fifth of the radius of its outer edge. This outer edge has only been examined on its northern side, but the inner edge is proved by a row of trial trenches within a sector of over 100°. No proof was found from 68 metres radius beyond 20 to 30 centimetres. It may be asked how was it possible to determine the exact limits of the rampart? This appeared a somewhat difficult problem. How could the length of the mound be discovered, and the gateway through it made? The answer was obtained very easily, by an examination of the inside of the northern section of the rampart by Herr Röar Skovmand, who found holes of a palisade line or bulwark that was finished by a wall of close perpendicular stakes, against which the earth bank was piled.

TRELLEBORG

This palisade continued the whole way round, except where the gates had been; there naturally they ceased, and the plan for the hanging of the gates was discovered.

Externally the rampart had a stone footing and a plank covering, with sloping buttresses. So the rampart stood as a wooden wall filled with earth. The filling is clay, turf, loose stones, and earth. According to excavations there appear to have been four gates, facing the four 'streets', north, south, east, and west; of these only the north gate has been excavated. It is about 3 metres or ten Roman feet in width. The west gate was examined by a trial hole. The east gate (PLATE, 1) is where the old entrance to the castle is supposed to have been, and of the south gate little is known.

There is an unexpected note in the earlier antiquarian writings on Trelleborg, of the year 1808, written by Pastor R. Kjørulf, of Slagelse, which states that there were four gates in the rampart and that these in former days had been closed by four iron gates. It is certainly true that the entrances to the place had been closed by iron plated doors, and it is stated that an iron key was found, which was so large, that a man could pass his hand through the ring of it. It is true that there was an iron key found in the north gate, though not so large as that mentioned by Kjørulf.

The character of the design is clear, and one can guess what its nature and purpose was, although it is something quite new to us, to which no parallel can be found.

Of the period when Trelleborg was planned one cannot say more than that it was in the 10th century. It can be seen that Trelleborg is not a self-grown or gradually growing market place, or town. It was in all particulars planned at one time, not built with complete precision, which suggests that it was not the first of its kind.

The buildings within the very strong rampart are generally of a light character, apparently never altered or restored. The whole thing can scarcely have been in existence more than a man's lifetime or two, possibly even for a shorter time. The houses are all 'folk dwellings', and they must have housed many people. Quite possibly in some part or another there had been room for animals, either within the rampart or in its 'streets'. But allowing for the fact that no agriculture was carried on from the place, one can so far declare Trelleborg as being a military position, a castle, a fort, or a fortified coastal camp.

The large houses are military barracks or quarters. The castle must have been built in some historic time of which we know nothing,

ANTIQUITY

but doubtless with the object of commanding the greatest road traffic on land and water, from the Great Belt to the interior of Sjælland. Whether it was friend or foe who settled here, the future must reveal.

Provisionally it can be said that the objects discovered are of ordinary Nordic character, as shown by the grave-finds consisting of 10th-century remains of oval brooches, a large comb, a spear-head, etc.

It is characteristic that there should be sixteen identical houses, with no chief's dwelling, which in size or situation stands above the others. Such a thing would be unthinkable in the Middle Ages, or later feudal times, but not in the Viking period, when a sort of spirit of brotherhood ruled. One has only to consider Jomsborg, and the conclusion is clear—Trelleborg is a Sjælland's Jomsborg.

When Rollo and his Vikings sailed up the Seine, and the Frankish king's messenger met them with the question, who was their leader? They answered in the following manner: 'We have no leader, we are all equal'.

Every house, or every square has perhaps room for a military unit, which naturally was led by a leader, living in common with his folk. The plan of Trelleborg is too simple and regular to have been designed by our Nordic forefathers, such a plan was far removed from what we hitherto know of them. They must have learned it in foreign lands, but we cannot say where or of whom.

The Roman camps or forts with their regular construction, which for example we know in England, would perhaps be considered to have been the distant prototype, although they were always square. Here at any rate we find the four gates.

In northern Germany there are any number of circular ramparts, where there are found certain marks of buildings, which as in the case of Trelleborg are designed in Roman foot measurements, but nowhere is there anything of Trelleborg character.

Trelleborg's foreign plan is thus one of the many unsolved riddles which still adhere to the place. Prototypes must have existed in the country from which the Vikings came, in the west or east, which need only to be discovered.

The many riddles must be unravelled in time, and first and foremost Trelleborg should be rediscovered by excavation which will go right to the bottom. Hitherto the necessary funds have been wanting. But the Carlsberg fund last year gave valuable help, in so much that we could go ahead with the work. It will therefore be hoped in the

TRELLEBORG

future to provide means to finish the task in a scientific manner. Fortunately the site is scheduled as an ancient monument, and as Herr Hans Lystrup, who comes from the neighbourhood, has given the much wanted subscription which was necessary to buy the site, Trelleborg has been made over to the National Museum's full ownership, whilst the actual rampart has been protected by a 'protective declaration'.

NOTE

The substance of this article is taken from two papers by Paul Norland in *Fra Nationalmuseets Arbejdsmark* (Copenhagen: Gyldendalske Boghandel) for 1936 (pp. 53-66) and 1938 (pp. 69-80); the plans are from the same source. Owing to the international situation we were unable to ask permission to use the information and wish to acknowledge our indebtedness to these journals. We also thank Mr A. W. Clapham, President of the Society of Antiquaries, for photographs from which the illustrations have been prepared and for other help in connexion with the article. EDITORS.

An Eighth-century Poem on St. Ninian

by WILHELM LEVISON

WHITHORN in Galloway and Kirkmadrine nearby are famous to the archaeologist and historian as the homes of the oldest Christian monuments in Scotland, namely the memorial stones still to be found there. They were erected in a district where the church history of Scotland originated through the efforts of St. Ninian. A few lines in Bede's *Ecclesiastical History*, III, 4, contain the earliest traditions about him which have come down to us. According to this late record, 'Nynia' was a British bishop who brought the Christian faith to the southern Picts (*australes Picti*). He had got his spiritual instruction in Rome, and had his episcopal see and his last resting-place amidst other saints—at Whithorn, *Ad Candidam Casam*, so called after the church dedicated to St. Martin which he built of stone, a fashion unusual to the Britons. As to his age, Bede merely says that he was at work a long time before St. Columba came to the northern Picts in 565. The intercourse with Rome can hardly have been later than the fifth century; a dedication to St. Martin who probably died in 397, cannot have been made before the same century. When Bede finished his History in 731, Whithorn was under Northumbrian rule, belonging to the northern 'province' of Bernicia. An English episcopal seat had been erected there shortly before, having Pecthelm as first bishop (*Hist. eccl.* v, 23); he had been a long time deacon and monk in Wessex with Aldhelm, the abbot of Malmesbury and bishop of Sherborne, famous for his writings, who died in 709. Pecthelm was one of Bede's authorities (*ib.*, v. 13, 18); so it has been suggested that the latter was indebted to Pecthelm for his knowledge of Ninian. Pecthelm was one of the correspondents of St. Boniface who also came from Wessex, and who wrote him a letter on a question of canonical law shortly before he (Pecthelm) died in 735.¹ It must also be noted that Bede distinguishes clearly between Whithorn, situated amongst the British, and the Pictish country, the scene of Ninian's missionary efforts.

¹ *Die Briefe des heil. Bonifatius und Lullus*, ed. M. Tangl (in *Mon. Germ. hist., Epistolae selectae*, 1), 1916, p. 55, no. 32.

AN EIGHTH-CENTURY POEM ON ST. NINIAN

The numerous English and Scottish authors who wrote on Ninian, have used, besides Bede and what information they thought they could get from monuments and church dedications, a late 'Life' of the Saint. The episcopal see of Whithorn disappears after 803, the last time we hear of Baldwulf, the fifth Saxon bishop. When the diocese was restored in or shortly before 1128,² there existed concerning Ninian 'a book on his life and miracles written in a barbarous style' which is now lost and owing to its *sermo barbaricus* did not suit the refined taste and learning of the age. Probably the second bishop of the revived see, Christian (1154-1186), prompted another 'Life' which was to change the 'darkness' of 'rustic' language into the 'light of Latin elocution'. It was written by Ailred of Rievaulx (c. 1110-1167), the Cistercian abbot some of whose works have been the subject of research in recent years. He 'doubtless was frequently in Scotland'; he came to Galloway probably in 1159 and certainly in 1165, when he visited Dundrennan, a daughter-house of Rievaulx,³ but there may have been many other occasions which led him to write a new 'Life' of the founder-saint of Whithorn. In composing it he used the practice of rhythmical endings, the *cursus* of medieval terminology. His tale is legendary in character and verbose, containing besides miracle-stories few facts which were not given by Bede. Ninian is said to have been the son of a king, to have visited St. Martin while returning from Rome, and to have got from him masons who constructed the church of Whithorn which he dedicated to the saint of Tours who had died in the meantime. Ailred refers for his work to the older source mentioned above, and modern historians attributed to this earlier writer the story of the visit to Tours which enabled them to date Ninian's age a little more accurately by the life-time of St. Martin, though they recognized the weakness of arguing from the words of an author writing more than 700 years after the times of his hero.

But there is other evidence available. It seems to have escaped

² The first certain date is given by the mandate of Pope Honorius II (Jaffé, *Regesta pontif. Rom.* 1², no 7225. Raine, *The Historians of the Church of York* III, p. 48; it belongs to the year 1128 (not 1125) according to W. Holtzmann, *Papsturkunden in England* II (= *Abhandlungen der Gesellschaft der Wissenschaften zu Göttingen, Philol. hist. Klasse*, 1935, 3d Series No. 14, p. 105, (cf. 147).

³ F. M. Powicke, *Ailred of Rievaulx and his biographer Walter Daniel*, in *Bulletin of the John Rylands Library, Manchester*, 1921-22, VI, 480. The *Vita Niniani* was edited by A. P. Forbes, *Lives of S. Ninian and S. Kentigern* (= *The Historians of Scotland* v), Edinburgh 1874, 137-57, and by W. M. Metcalfe, *Pinkerton's Lives of the Scottish Saints* (Paisley 1889), I, 9-39.

ANTIQUITY

the notice of most students of the ecclesiastical history of Scotland that a new text appeared twenty years ago which gives us the opportunity of forming a somewhat clearer idea of Ailred's lost source. It was edited by Karl Strecker, the Berlin professor of medieval Latin philology now retired, who, besides other excellent work in the field of the Latin poetry of the Middle Ages, brought to a successful conclusion the last volume of the Latin poems of the Carolingian age in the collection of the *Monumenta Germaniae historica*. I should like to call the attention of British readers to the studies on St. Ninian found in this edition, but very naturally overlooked, owing to the general contents of the collection.⁴

There exists a letter of the famous Alcuin directed to the brethren of Candida Casa. He sends a present to the body of their holy father 'Nyniga' and asks them to intercede for him by their prayers in the church of 'Nynia'. He mentions the miracles worked by this holy bishop of which he knew from poems lately sent to him by his pupils, the scholars of the church of York, proving to him the erudition of the poet as well as the saintliness of the miracle-worker.⁵ Alcuin was a friend of Bishop Aedilberct of Whithorn (777-790) who exchanged his see for that of Hexham in 790 and died in 797. Alcuin wrote a letter to him and his Hexham congregation in these years, remembering the old friendship.⁶ But we are unable to say whether the letter he sent to Candida Casa belongs to the Whithorn years of Aedilberct, or of his successor Baldwulf, the last Saxon bishop consecrated to Ninian's see in 791, or even to the time of the vacancy about 790, no bishop being mentioned in Alcuin's Whithorn letter. But it was written after he had left England about 782 to stay with Charlemagne; Alcuin's death in 804 sets the other limit. The poems on Ninian mentioned by him were unknown for many centuries, but they are preserved in a manuscript at Bamberg in Franconia. The latest editor of Alcuin's letters, Ernst Dümmler, referred there to it in 1895 in a short note; a mention is

⁴ A short mention of Strecker's essay and edition (see below) has been made by J. F. Kenney, *The sources for the early history of Ireland*, New York 1929, I, 159, n. 9; of the essay, by L. Gougaud, *Christianity in Celtic Lands*, London 1932, p. XLIX. The text has been used by J. D. A. Ogilvy, *Books known to Anglo-Latin writers from Aldhelm to Alcuin* (=The Mediaeval Academy of America, *Studies and Documents*, no. 2), Cambridge (Mass.) 1936, pp. XIV, 33, 36, 79.

⁵ Alcuin, Epist. no. 273, ed. Dümmler, *Mon. Germ., Epist.* IV, p. 431. William of Malmesbury has inserted the relevant part of the letter in his *Gesta pontificum Anglorum* III, § 118 (ed. Hamilton, p. 256).

⁶ *loc. cit.*, p. 72, no. 31.

AN EIGHTH-CENTURY POEM ON ST. NINIAN

also to be found in Vollmer's edition of the African poet Dracontius (*Mon. Germ., Auct. ant.*, 1905, xiv, p. xv). But it was Strecker who actually made it known by an important essay in 1920: *Zu den Quellen für das Leben des hl. Ninian* (in *Neues Archiv der Gesellschaft für ältere deutsche Geschichtskunde*, 1920-22, XLIII, 1-26), and by the edition of the text in 1923 in the *Poetae Latini aevi Carolini*, vol. IV, fasc. II-III, pp. 943-62 (cf. also pp. 452 ff. on the ms.).

Codex B II, 10, of the public library of Bamberg is not the manuscript sent to Alcuin. It is a composite volume of which the second and older part (fol. 133r-161v) was written in the tenth century and contains a copy of a *florilegium* of four books collected by Alcuin, as the title indicates. The fourth book embraces extracts from poems and ends with the Ninian texts, *Miracula Nynie episcopi* (fol. 157v-161v) and a *Hymnus sancti Nynie episcopi* (fol. 161v), undoubtedly the poems mentioned by Alcuin. The longer text, consisting of 504 hexameters which are divided into 14 chapters by prose headings, refers to the life of Ninian and to the miracles worked after his death. The 'hymn' is composed of 27 'epanaleptic' elegiac couplets, where the second part of each pentameter repeats the first part of the preceding hexameter; the distichs each begin with one of the 23 letters of the alphabet and with the four letters of *Amen*. The poet followed in this artificial way the model of the poem in honour of Queen Aedilthryd which Bede inserted in his History (IV, 20), but which was also copied separately.

The hymn is written by the same author as the larger poem, but as it gives no new facts it can be neglected here except for the dating provided by the imitation of Bede. It contains also poetical scraps taken from elsewhere, and in this resembles the principal work, which in several places is nothing but a mosaic of borrowings, the sources of which are pointed out in Strecker's annotations. The poet read and used some earlier Christian poems; but, what is more relevant here, he made larger use also of Anglo-Latin poetry nearer to his own times, of Aldhelm's works, and of Bede's metrical Life of St. Cuthbert composed between 705 and 716.⁷ We have to remember that Pecthelm, the first Saxon bishop of Candida Casa, was attached a long time to Aldhelm and was a friend of Bede; so it is natural that writings of both should be known at Whithorn. Even the headings of the chapters are on Bede's pattern. The poet must therefore belong to the eighth

⁷ W. Jaeger also has shown the dependence of the *Miracula Nynie* on Bede's poem in the notes of his edition of the latter: *Bedas metrische Vita sancti Cuthberti* (= *Palaestra* 198), Berlin 1935 (cf. p. 8).

ANTIQUITY

century, and Strecker may be right in supposing that the poems were a fresh piece of work when they were sent to Alcuin by his York pupils across the sea in the later part of the century. That the author wrote at Whithorn is shown by several verses in which the place and the district are referred to as *noster*, 'our' (v. 21, 82, 99, 324); so he is one of the earliest writers of Scotland, working about a century after Adamnan of Iona. The poem is not a masterpiece; though the manuscript is not free from copyist's errors, and it is difficult sometimes to distinguish between the mistakes of the latter and those of the poet himself; he is no doubt accountable for a large part of the grammatical and prosodic blunders in spite of all his learning. Nor are his style and arrangement always very clear, even when all concessions are made to the poetical setting. The poem nevertheless has its place in literary history on account of its age; as Strecker has observed, not only do a few phrases of Alcuin show the influence of the work sent to him, but it has also impressed its mark on the poem which Aedilwulf at the beginning of the next century devoted to the history of a Northumbrian monastery (Crayke?).

But the significance of this early piece of northern poetry is not restricted to its literary interest; it has also its historical importance. About the middle of the twelfth century Ailred of Rievaulx referred, as I mentioned before, to an old Life of Ninian. The poem does not represent this lost source itself, but the poet as well as Ailred has drawn from the same Latin text, as Strecker's comparison of both has established. It makes all the difference whether a historian is depending for the same points on a 'witness' of the eighth century or of the twelfth. The contents of the poem and of Ailred's work correspond with each other on the whole, even in the order of subjects, except that the poet gives the first place after the saint's return from Rome to the Pictish mission (ch. 3), whereas Ailred postpones the conversion of the Picts (ch. 6) until after the building of the church at Witerna and two miracles (ch. 3-5). The poet knew no more of Ninian's life than Ailred; the poem also is rather a collection of miracles (as the title indeed indicates) than a biography, of miracles worked by the saint when living and after his death. Here also we are told of his British origin, his studies in Rome and his episcopal consecration by the Pope, the return to his native country and his missionary work in the lands of the Picts, where churches (*basilicae*) were erected and where 'now an excellent swarm of monks' resides. Here also the Picts are clearly distinguished from Ninian's British *patrias fines*, where he built a church

AN EIGHTH-CENTURY POEM ON ST. NINIAN

founded on *coctilibus muris* (a word of Ovid, *Metam.* iv, 58) and adorned it with a marble pavement (v. 322, 327, 407). He dedicated it in honour of St. Martin, and had monks there with him (v. 106, 189, 206). The church was to become also the last resting-place of the saint and is visited by many people (v. 92). The funeral is indicated in the heading of ch. 9, but the account is missing, a number of verses apparently being lost; we may also have lost a short description of the tomb as well.

The poet omitted certain miracles, as he expressly declares in his last chapter, and Ailred tells some more which we may ascribe to the common source: the story of the saint travelling with his brother Plebia in the rain which does not touch them while they read the psalter, and descends on Ninian only when unlawful thoughts divert him from his book (ch. 9); the tale of a pupil who being afraid of the threatening birch intends to flee to Ireland (*in Scotiam*), but being in danger of his life on the sea repents and is rescued by Ninian's staff which he had taken with him; the staff became rooted in the ground and afterwards grew into a large tree, a fountain springing from the soil at its foot (ch. 10). Ailred ends his work by telling of the cure of two lepers effected by the waters of a well near the tomb (ch. 12, § 4). The second and the last story are connected with Ninian's wells and a tree and belong to the numerous class of topographic legends.

On the other hand the poet's longest story, the last (ch. 13), is missing in Ailred's work, who may have omitted it because it does not relate to Ninian at all but happened in his church. It is a eucharistic miracle:⁸ the priest Plecgils⁹ desired to see the mysteries of the Lord's Supper; the wafer was transformed into the infant Jesus and converted into the Bread again, after the priest had embraced Christ and touched him with his lips. The originality of this story is confirmed by the fact that Paschasius Radbertus of Corbie in his famous book *De corpore et sanguine Domini*, ch. 14, § 5 (*Migne Patrol. Lat.*, cxx, 1319 f.; Strecker pp. 957 ff.) about 832 translated the tale which he refers to *gestis Anglo-rum*, into prose, in which echoes of the verses occur.¹⁰ Alcuin had been

⁸ Cf. Peter Browe, *Die eucharistischen Wunder des Mittelalters* (= *Breslauer Studien zur historischen Theologie*, New Series IV), Breslau 1938.

⁹ The same name is found in the anonymous *Life of St. Cuthbert* II, 3 (ed. Colgrave, p. 78), and in the *Liber Vitae* of Durham.

¹⁰ Caesarius of Heisterbach in his *Expositio sequentiae 'Ave praeclara maris stella'* borrowed the story from Radbert; see A. Hilka, *Die Wundergeschichten des Caesarius von Heisterbach* I (= *Publikationen der Gesellschaft für Rheinische Geschichtskunde* XLIII, vol. I, p. 177), Bonn 1933.

ANTIQUITY

a friend of Adalhard of Corbie, and we have several letters written by him to this abbot ; so that it is easy to guess how the poem became known to Radbert, and how he could use for his work one of the best told stories in it which does not occur in the later ' Life '.

Ailred and the poet supply not only complete stories. There are also details of common chapters given by one or the other which may be referred without hesitation to their source. Both tell how the British king Tudvael¹¹ was punished with blindness and healed by Ninian ; but only the poet mentions that he ejected the saint from his lands (v. 111-112). He (ch. 10) and Ailred (ch. 12, § 1) relate that a crippled boy was restored to his normal state while lying at the saint's tomb during the night (after the manner of the ' incubation ' of antiquity), and that he was tonsured and lived in the service of Ninian's church, but only the poet gives his name *Pethgils*¹² in the last verse of the chapter (v. 324). Poets of this kind are inclined to drop proper names owing to difficulties of metre. Ailred alone (ch. 12, § 2.3) mentions the names of a leper (poem ch. 11 ; cf. hymn 13) and of a blind woman (poem ch. 12) cured at the saint's tomb, *Aedelfridus* and *Deisuit* (Old English *Daegswith*).

The poet and Ailred tell (ch. 8) how cattle thieves were frustrated in their purposes, and how their chief was killed by a bull and revived by the saint. The beast left the impress of its track on the rock :

228 et—mirum dictu—torvus vestigia taurus
impremit [in] silici velut [in] mollissima cera

230 ungibus et teneris cessit firmissima cautes.

It is no doubt an aetiological and etymological legend originating like many similar stories in some special feature of the rocky soil and in the relevant name of it ; one expects to find a sentence to the effect that the mark could be seen to the present day, and that the place had been given a name derived from the event. But Ailred alone preserved this motif which like Strecker I think is original :

Deinde terram *ungulis* fodiens, mirabili impetu saxum quod invenerat pede percutit, ac *mirum* in modum in tanti miraculi testimonium quasi in *molli cera* in lapide pes mergitur, relinquens in petra

¹¹ So v. 104, *Thuvahel* in the title of ch. 5 of the poem ; *Tuduvallus*, that is *Tudwallus*, Ailred ch. 4. The name occurs as Tothail in Adamnan's *Vita Columbae* ; as Tutagual in the Welsh *Genealogies* of the tenth century, etc.

¹² Better Pehtgils, that is, Pectgils, as the name appears several times in the *Liber Vitae* of Durham.

AN EIGHTH-CENTURY POEM ON ST. NINIAN

vestigium, et ob vestigium loco nomen designans. Adhuc enim ipse locus Anglice Farres Last, Latine Tauri Vestigium nuncupatur.

Anglo-Saxon *fearres last* is of course the 'bull's track'.

But not all things which are missing in the poem and related by Ailred, can be attributed to the common source; he made additions which have to be explained only by reference to his own age. He contrasts not only Ninian's virtues, which are after all merely conventional, with the morals of his own times which he deplors (ch. 9); nearly all agree also that he transplanted institutions from twelfth century Scotland into the fifth by ascribing to Ninian the consecration of bishops and the establishment of separate parishes in the country of the Picts (ch. 6). The poet, as I have said before, mentioned only the construction of churches where in his time a monastic 'swarm' flourished. Nor did he speak of the saint's infancy nor of his descent except by a passing allusion:

97 *Arbiter eternus, qui condidit omnia, sanctum*

late per populos lustravit (=illustravit) stemmate claro.

Ailred (ch. 1), besides many commonplaces, not only declares him to be descended from a noble family: *haut ignobili familia*, but even from a king: *Pater eius rex fuit*, probably a legendary addition.

The poet, like Bede, relates that Ninian erected a stone church, *Casam Candidam*, and dedicated it in honour of St. Martin (ch. 4). But only Ailred (ch. 2) tells that Ninian returning from Rome stayed some time with the saint of Tours and got masons from him to introduce the Roman method of churchbuilding in his native country, and he adds accordingly (ch. 3) that Ninian chose Martin as patron-saint having heard that he had died in the meantime. It is unthinkable that the poet would omit a personal link of his hero with the celebrated bishop of Tours, if he had found it mentioned in his source. We have here no doubt a later accretion to the legend made either by popular imagination or invented by Ailred himself. He knew of course Martin's 'Life' written by Sulpicius Severus, one of the most widely read books of the Middle Ages, and refers to it; in reading of Severus' visit of the saint he may have got the idea of a similar story about Ninian:

Severus, *Vita Martini*, ch. 25: *Nam cum olim . . . desiderio illius aestuaremus, gratam nobis ad eum videndum suscepimus peregrinationem. . . . Quo quidem tempore credi non potest, qua me humilitate, qua me benignitate suscepit. . . .*

ANTIQUITY

Ailred, ch. 2 : Rediens itaque ab Urbe vir Dei spiritu plenus,
tactus *desiderio videndi eum*, ad civitatem Turonicam iter divertit.
Quo gaudio, qua devocione, quo affectu ab eo *susceptus* sit, quis
facile dixerit ?

Martin's death in 397 gave many historians some doubtful help in dating Ninian's time : we must, however, be satisfied with ascribing his activity broadly to the fifth century. Whithorn nevertheless retains the fame of having had one of the oldest churches of Scotland, to be compared with St. Martin's of Canterbury. There are also the monumental stones, and excavation may one day confirm the tradition.

The distance of four centuries between the poet and Ailred is emphasized even by the name of the saint. Ailred uses the Latinized form *Ninianus*. In the new texts we find the genitive *Nynie* and the accusative *Nyniam*, corresponding with Bede's ablative *Nynia*. The nominative also is twice given as *Nynia* or *Ninia*, which may be a correction of the copyist ; for in two other verses the spelling is *Nyniau*, in accordance with modern scholarship which identified the name with the British Nynnyaw.¹³

Ailred in mentioning the Picts converted by Ninian calls them the southern Picts, *australes Pictos* (ch. 6), following Bede whose lines on Ninian he had copied in his preface. The poet in the heading of his third chapter has a different specific word. It is corrupt in the unique manuscript, and Strecker did not find a suitable emendation :

Quomodo patriam reversus Pictorum nationes, quae *naturae*
dicuntur, Christi converterit ad gratiam.

There exists, however, if I am not mistaken, an obvious correction suggested by the old prose Lives of St. Cuthbert, for the first critical edition of which we are indebted to Bertram Colgrave.¹⁴ The earliest biographer, an anonymous monk of Lindisfarne who wrote his work between 698 and 705, tells of a voyage which Cuthbert made by ship after Christmas from Melrose (II, 4, p. 82) :

Alio quoque tempore de eodem monasterio quod dicitur
Mailros cum duobus fratribus pergens et navigans ad terram
Pictorum, ubi dicitur *Niuduera* regio, prospere pervenerunt,
where their return was delayed for some days by a storm at sea till
the fourth day after Epiphany. Bede in repeating the story says
(ch. II, p. 192) :

ad terram Pictorum, qui *Niduari* vocantur, navigando pervenit.

¹³ W. J. Watson, *History of the Celtic place-names of Scotland*, Edinburgh 1926, p. 293.

¹⁴ *Two Lives of Saint Cuthbert*, Cambridge 1940.

AN EIGHTH-CENTURY POEM ON ST. NINIAN

These Picts who could be reached from Melrose in a few days *navigando*, viz., down the Tweed and by the sea, dwelt no doubt in the eastern part of Scotland, perhaps in Fife or the neighbourhood. The name may have been given to them by the Angles and perhaps be connected with Old English *neothe-(weard)*, *nithe-(weard)*, 'down' (cf. the comparative *neothera*, *nithera*, later *nether*, 'lower'), and mean the low-dwellers, the Picts of the Lowlands, opposed to those of the Highlands in accordance with Bede's description of the dwelling-places of the southern and northern Picts (*Hist. eccl.*, III, 4).¹⁵ The philologists must judge the possibility of this etymology; in any case Bede's *australes Picti* correspond to the Picts of the poem, so that I may correct consequently: *Pictorum nationes, quae Niduaræ dicuntur*, inserting an *a* after *u* and writing *id* for *at*. There is no lack of errors in the manuscript; an Anglo-Saxon *id*, having the upper part of the *d* (or *ð*) raised only a little above the line, may have been easily mistaken by a Continental copyist of the tenth century for an 'open' *a* (in the *ic*-form) and a *t*.

The poet was fulfilling the wishes of the Saxon community of Whithorn in the eighth century, just as Ailred satisfied the aspirations of the restored bishopric of the twelfth, by establishing and increasing the fame of the ancient founder. What about the common source? It was certainly not much older than the poem. The author of the lost 'barbarously' written Latin Life did not know more of his hero than Bede. He also lived in the time of Northumbrian predominance in Galloway; except Ninian, his brother Plebia¹⁶ and the British king Tudvael, all names of persons given in the poem or by Ailred connected with the miracles, are English names: Pethgils (=Pectgils), Plecgils, Aedelfridus, Deisuit (=Daegswith); to which must be added the local name of F(e)arres Last, if it also has been rightly traced back to the first Life. Bede has not seen this; introducing what he has to say of Ninian with the words *ut perhibent*, he is alluding as usual to hearsay.¹⁷

¹⁵ Patrick's letter against Coroticus making mention *Pictorum apostatarum* does not help here, though the historians may be right in connecting them with the Picts converted by Ninian; see e.g. J. B. Bury, *Life of St. Patrick and his place in history*, London 1905, p. 313; Gougaud, *loc. cit.* p. 26; J. A. Duke, *History of the Church of Scotland to the Reformation*, Edinburgh 1937, p. 9.

¹⁶ Perhaps the name may be connected with Latin *plebs* (Welsh *plwyf*, having the sense of 'parish') cf. Gougaud, *loc. cit.* p. 119.

¹⁷ See Ch. Plummer, *Bædæ Opera historica* (Oxford 1896), I, XLV, and my remark in *Bede, his Life, Times, and Writings* (ed. A. Hamilton Thompson), Oxford 1935, p. 140; see also C. E. Wright, *The Cultivation of Saga in Anglo-Saxon England*, Edinburgh 1939, pp. 39 ff., 246 f.

ANTIQUITY

He had not even heard of the existence of the Life, as he had of St. Columba's, of whom he says in the same chapter : *de cuius vita et verbis nonnulla a discipulis eius feruntur scripta haberi* ; and being a friend of Bishop Pecthelm, one of his informants, he would probably have had knowledge of a written text on Ninian, if it had existed then. So the lost work in my opinion was not the source of Bede's information on Ninian, as Strecker thought, but was rather composed in the middle or the second part of the eighth century. The author may have read Bede's lines, as Ailred did later ; this is how I explain the correspondence between Bede and the presupposed source.

The new text was found in a Continental library, not in England or Scotland, nor does it stand alone in this respect. The English missionaries and scholars working in the Frankish kingdom since Willibrord's days brought books with them and sought to get others from home. The British Isles acted as intermediaries not only for classical and earlier ecclesiastical texts, but their own contemporary literary achievements also participated in this wandering of manuscripts. The first Life of St. Cuthbert, written about 700 at Lindisfarne, exists today only in seven manuscripts, all either written or preserved on the Continent ; the first Life of Pope Gregory the Great, composed about the same time at Whitby, has been saved in a unique copy at St. Gall. The Continental tradition of the Penitentials originating in the rules of Archbishop Theodore of Canterbury prevails by far over the 'insular' transmission. Bede's Martyrology survived on the Continent, having received there an addition on the martyrdom of St. Boniface and his companions. The rhythmical poems of Aethilwald exist only in a manuscript of the letters of this Boniface, from Mainz, now in Vienna. Alcuin's great poem on York has survived only in two manuscripts of Reims.¹⁸ Mostly through the devastations of the Norsemen such works disappeared from British libraries, but copies were saved beyond the sea ; so in a later age, owing to the burning of the heretics and of their books, many of Wycliffe's writings were destroyed in his native country, but survived in Bohemia, the land of his follower Hus. A part of the manuscript tradition of Cuthbert's fine letter on the death of Bede is connected with Alcuin's continental

¹⁸ Both seemed to have disappeared ; so the latest editors of Alcuin's poem, Raine (1879) and Dümmler (1881), had to recur to a transcript (now at Cambridge) sent to Gale by Mabillon. But the *Codex S. Theodorici* was found in the meantime, a ms. of the ninth century, now no. 426 of the public library at Reims ; see Strecker, *loc. cit.* p. 1128.

AN EIGHTH-CENTURY POEM ON ST. NINIAN

years,¹⁹ and it is perhaps worth while to remember that King Alfred's *Orosius* can be read not only in a few English copies, but that fragments of it are also found in a palimpsest of the Vatican Library used for a second time about 1100 at Trier.²⁰ The poems on St. Ninian emerging from oblivion after more than a thousand years, join this company, which could be easily enlarged. *Habent sua fata libelli.*

¹⁹ See N. R. Ker, *Medium Aevum* (1939), VIII, 40 ff: but also R. Brotanek, *Anglia*, 1940, LXIV, 162 f.

²⁰ See *Mon. Germ., Scriptores rer. Merov* (1920), VII, 666 on Vaticanus Reginae Christinae Lat. 497 (with earlier literature). Ampler knowledge may be expected with the progress of Dom Wilmart's *Codices Reginenses Latini*.

Ancient Rome and Northern England

A Historical Summary*

by I. A. RICHMOND

ON the northwest frontier of the Roman Empire, the upland country of northern England always belonged to the military zone. Even today, anyone traversing the wild fells of Pennine or Cheviot, which form its backbone, can soon appreciate why this should be: and understanding becomes complete when imagination has pierced the dark vista of medieval forest and outlaws' haunts and apprehended a state of affairs when the bounds between man and nature were still more loosely defined. No Anglian settler had yet begun to clear the overgrown dales for farm, hamlet and township. Man was eking out an unenviable existence between forest and fell, selecting where he could the limestone shelves whose natural drainage afforded him good pasturage and meagre tillage. Two closely related factors thus determined the political character of the country. Forest and fell not only gave cover to enemies and outlaws but at the same time prevented the growth of flourishing agricultural communities, such as were capable of developing social instincts receptive of civilization. The result was chronic unrest and potential hostility to civil government.

For the first twenty-six years of the Roman occupation of Britain, that is A.D. 43-69, the problem of controlling the north had not exercised the mind of the Roman Government. The paramount tribe of the Brigantes, centred in West Yorkshire, but controlling the Pennine country from sea to sea, had at first concluded an alliance with Rome, which was ultimately broken, not by Roman pressure, but by their own party faction. To the Roman administration the alliance must have been invaluable, since it gave the necessary breathing-space for the organization of the province and even held firm while discontent flared up in the rebellion of 61. The only important task which was still incomplete when war with the Brigantes broke out was the conquest of Wales: and this was temporarily postponed, while the Ninth Legion advanced from Lincoln into Yorkshire by the natural land-bridge of the Wolds. Its new base was fixed at York, whence it was possible rapidly to strike at the heart of the Brigantian kingdom. This done, permanent posts must at once have reached at least the fringe of Durham and Cumberland, while Roman troops no doubt entered them for the first time.

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ANCIENT ROME AND NORTHERN ENGLAND

They have left their mark in the temporary entrenchment of Rey Cross on Stainmore, four miles west of Bowes, at the very gateway of Cumbria. The official version of the campaign was that Cerialis, the Governor-General, had conquered 'a great part' of Brigantia.

The Roman high command was now fairly committed to that policy of highland conquest, which it had hitherto shrewdly and even sedulously avoided. The northern advance, however, hung fire for four years, until Frontinus and Agricola had completed the conquest of Wales. Then Agricola carried the movement rapidly forward by a series of brilliant and penetrating forays, steadily followed by cautious permanent occupation, until all the hill-country south of the Caledonian Highlands was subdued. The system of occupation was simple yet effective. After a painstaking reconnaissance, in which Roman genius was displayed to its fullest advantage, a network of roads was laid out, dividing the land into sizeable districts for police supervision and, in particular, surrounding all dangerous blocks of hill-country. At each road-junction, or at suitable stages between them, permanent forts, described below, were erected to hold infantry or cavalry garrisons, in units about 500 or 800 strong. Each fort was self-sufficient and its commander, a prefect or tribune, was responsible to one or other of the legionary commanders or legates stationed at York and Chester. Cavalry units were responsible to the governor-general. Accordingly, the trunk-road system, begun by Cerialis and completed by Agricola, was based upon these fortresses. The first requirement was a connexion between Chester and York by way of Manchester, the Stanedge pass and Tadcaster. Then came the two north roads; on the west, from Chester to the Clyde, by Warrington, Wigan, Ribchester or Lancaster, Overborough, Brougham and Carlisle; on the east, from York to Forth and Tay by Aldborough, Catterick, Pierce Bridge, Binchester, Ebchester, Corbridge, High Rochester and Newstead. Further cross-roads linked these arterial ways, the two most important running from Scots' Corner, by way of Bowes and Brough-under-Stainmore, to Brougham, and from Corbridge to Carlisle by way of Chesterholm, Carvoran and Nether Denton. Nor should the links with the sea be forgotten, since this would overlook an element much used in the Roman world for heavy transport. From Overbrough or Lancaster a road passed by Ambleside and the Wrynose pass to Ravenglass; from Binchester, South Shields was reached by way of Chester-le-Street; Northumberland was penetrated by a famous road running from Corbridge to Tweedmouth.

ANTIQUITY

This extensive network of fortified roads, neatly serving the needs of administration and defence, depended for its normal working upon the auxiliary troops who manned it. These were housed in the roadside forts, in this period defended by dry ditches and a clay or sod rampart crowned with timber breast-work and further protected by towers. The plan of such works was normally oblong or almost square, with rounded angles. Their internal buildings were of timber. A row of administrative buildings occupied the short axis and comprised a central headquarters, embodying a courtyard and judgment-hall with regimental shrine and offices ; granaries to hold at least a year's supply ; and a spacious commandant's house built round its own courtyard and ensuring privacy for domestic life. The space to front and rear was occupied by barracks or stables of standard size, in sixes or tens according to the strength of the regiment. The comparative uniformity of plan enables an excavator to recognize its elements even when only small portions of them can be recovered : and this is well ; for these early forts are usually deeply buried below later stone buildings which render their complete recovery impossible. The troops in these posts were tribal levies, drawn from the wilder provincial districts, such as Thrace, northwestern Spain, northeastern France, the Rhine frontier or the Tyrol. Only their commanders were Romans, and these increasingly of non-Italian origin. Thus, to think of this question of Empire on nationalistic lines is an anachronism born of historical ignorance. Roman citizenship was prized, in St. Paul's manner, as a legal status : it was acquired by these very levies after twenty-five years' service.

The self-sufficiency of each auxiliary fort indicates both the purpose and limitations of the systems. The garrison was adequate to undertake all the police-work of its district and to meet the everyday contingencies of a post in the hill-country. In a major crisis, however, the auxiliary forces looked for action to the heavy infantry of the legions, whose superiority in numbers and in training gained them the reputation of invincibility. Experience had indeed shown that few barbarians could withstand the legionaries' firm discipline and superior equipment. The inherent weakness of a fort-system extending from York and Chester to the Highland Gates was thus the distance separating base and farthest outposts. Agricola had guarded against this danger, first by achieving his smashing victory at *Mons Graupius*, an earlier Culloden, and, secondly, by establishing a legionary fortress at Inchtuthil on the lower Tay, to form the hard core of resistance against counter-attack.

ANCIENT ROME AND NORTHERN ENGLAND

In this respect Inchtuthil resembled Wroxeter or Lincoln as those fortresses had been in the days before Cerialis. The need for a striking force within easy reach of the frontier was thus met, and the system was no doubt considered to have been admirably safeguarded. *Dis aliter visum!* Very soon after Agricola's recall the balance of power was upset by the reduction of the legions in Britain from four to three. The immediate effect of this change upon the more northerly frontier arrangements is as yet unknown, but it obviously meant the end of the offensive movement and the beginning of insecurity for the northern outposts. It is a tribute to the effect of Agricola's campaigns that the skeleton of his system, thus deprived of flesh and blood, lasted until the turn of the century at least. At this time the military engineers were strenuously rebuilding timber forts in stone, beginning with the legionary fortresses, between A.D. 99 and 109, and extending simultaneously to the auxiliary forts. This change is not known to have affected the Scottish forts, but it appears on the cross-road between Corbridge and Carlisle, which was now equipped not only with frequent forts but with smaller stone-built posts between them. This would suggest that the Stanegate had become the frontier and that the land north of Cheviot had been evacuated. At all events, it is clear that the initiative had passed to the free Britons. The ebb of Roman power continued, reaching its lowest limit when the Ninth Legion was disgracefully defeated in A.D. 117. Heavy campaigning followed, supported by strong reinforcements from the Continent. But the situation also demanded a permanent reconstruction of the frontier. This was put in hand in A.D. 122 by the Emperor Hadrian himself, supported by Platorius Nepos, at that time his destined successor and Governor-General of the province.

Whatever had been the precise form of the previous frontier, Hadrian's choice confirmed the Tyne-Solway gap as the boundary of the Roman province. There was to be no more petty raiding, flaring into major incidents and wearing down the morale of the frontier troops. The limits of the Empire were to be marked by a high and massive wall protected by a dry fosse, the whole running for 76 Roman miles from Newcastle upon Tyne to Bowness on Solway, and having milecastles (that is, guard-posts with sally-ports), at every mile and intermediate look-out turrets at every 540 yards. While the fosse remained uniform, except where cliffs took its place, the first 45 miles of wall from east to west were to be of stone, for the locality provided freestone for ashlar, whin for aggregate and limestone convertible to grouting : the remaining

ANTIQUITY

31 miles were to be of turf, in which the Cumberland mosses abounded, to the exclusion of limestone and whin. The forts, as on Hadrian's contemporary German frontier, may have been intended to lie behind the patrolled line, on the Corbridge-Carlisle cross-road.

As the great scheme proceeded, modifications were introduced, some structural, of interest only as defining the order of progress, others amounting to a thorough revision of the design. The most important of the latter was the construction of forts on the Wall itself, so that offensive power might supplement the milecastle patrols more rapidly, while the military zone became much more compact. To mark off the new zone and to supervise with increased rigour all who approached it from the south, a second boundary was constructed, consisting of a dry, steep-sided, flat-bottomed ditch, from which the upcast was disposed to north and south in turf-revetted mounds one hundred feet apart from crest to crest. This barrier, commonly known as the Vallum, formed a zone in itself, patrolled by a track running between the ditch and south mound, reached from the milecastles by causeways opposite their south gates. Passage through the south mound was provided at forts only and controlled by doors placed in the centre of a causeway across the ditch. Such was the arrangement of a work long obscure in purpose and date, and hence the subject of many theories, but now elucidated by excavation.

The next important modification was the addition of new forts to the Wall. The secondary plan had provided large forts about seven miles apart, holding five hundred cavalry or eight hundred infantry: to this series belong Benwell, Rudchester, Halton, Chesters, Housesteads, Birdoswald, Castlesteads, Stanwix, Burgh-by-Sands and Bowness. Smaller forts were now supplied where experience demanded. These were Wallsend, linked with Newcastle by a four-mile eastward extension of Wall and fosse, Carrawburgh and Great Chesters, all guarding approaches obvious only to desperate men. Thus, the provision indicates both the proved efficacy of the barrier, and the determination to maintain its efficiency at weaker points.

Finally, the turf Wall was replaced in stone. This concession to uniformity, however, took place by no means so rapidly as the other changes, though some considerable time before the close of the century.

The important changes in design thus revealed are new to history, which mentions neither them nor their causes. But the causes at least may be concisely defined as pressure under-estimated by Hadrian and his staff. The successful punitive campaigns, which secured the

ANCIENT ROME AND NORTHERN ENGLAND

builders of the Wall from interruption, must almost certainly have induced optimism as to the lightness of the future task. In its final form, the frontier defence was doubtless the most imposing in the Empire, as its remains are today, and the best equipped for the offensive method of defence employed by Rome. Nevertheless, the initiative still lay with the Britons, for the Wall was of no service as a base of attack upon communities whose centres lay beyond the Cheviot. Nature had screened them by moors and fells prolific of moss-troopers, and no Imperial ordinance could alter the geographical fact.

However quickly this stalemate in frontier policy became apparent, Hadrian stirred no finger to alter further a scheme to which he had devoted personal attention. Its cancellation was one of the earliest acts of the succeeding reign. Less than a year after his accession, Antoninus Pius decided to revert to Agricola's policy and prepared to annex southern Scotland. Large new buildings were erected in 139-40 at Corbridge, where a supply-base for the eastern road to the Forth was organized behind the shelter of Hadrian's Wall. The forward movement, however, could not be uninfluenced by previous experience, and the new frontier therefore took the form of a turf Wall, occupying the thirty-six mile gap between Forth and Clyde earlier chosen by Agricola for a temporary halt. Outposts were held beyond this, controlling the principal routes to the Highlands. The result was to create an occupied zone which, after being heavily drained of manpower by forced levies, served as a shock-absorber for frontier-troubles. Archaeology and history attest that dangerous commotions and disasters did indeed shake the new system—there were wars in 155-158, 162 and 181; but they also indicate that in so far as its function was to screen Hadrian's Wall and to preserve it unbroken, the arrangement was a success. Moreover, the shelter thus afforded gave rise to a new growth of prosperity as the Brigantes slowly learned the lessons of orderly life. In fertile Yorkshire, quite apart from the large cantonment which grew up round the fortress at York, there was room for a flourishing tribal capital at Aldborough, and, above all, new romanized farmsteads tell of agricultural prosperity spreading over all the available cornlands. In the hill-country, as of old, pasture necessarily dominated and depressed living-conditions, but a reflection of improvement is seen in the widespread distribution of Roman small objects and coinage in the hill-villages and in the steady growth of trading-posts, rich with shrines and shops, outside the forts. One of the biggest of such trading-posts was Carlisle. Thus, in the fort settlements a semblance of civilized

ANTIQUITY

life was to be found. The villages remained impervious to change : a sullen silence, broken somewhere within the tribal territory by an outburst which cost the tribe much land, best expresses the attitude of hill-folk whose economic development was curbed by nature and seemed chained by man.

At the close of the second century the larger politics of the Empire crossed disastrously with those of northern Britain. In the year 193 the Imperial succession, long uninterrupted, was broken by the assassination of Commodus ; and in the contentions between army-chiefs which followed, Clodius Albinus, Governor-General of Britain, took a prominent part, winning recognition at first but ultimately having to contest his claims by a continental war in which he lost his life. The fighting drained the province of all but a skeleton garrison, and when the news of disaster came, in the spring of 197, the Caledonian tribes broke Hadrian's Wall and vindictively wasted all Brigantia. The damage took nearly ten years to repair and only then did Severus visit the province and conduct in person two savage punitive campaigns.

The immediate result of these campaigns was peace which lasted for nearly a century, bringing with it important changes in outlook. There was no more internal trouble, partly perhaps because the Brigantes now attached a new value to Roman protection, but certainly because a gradual revolution in Roman army recruitment was taking place, so that auxiliary garrisons and legionaries were being drawn increasingly from their own district. Relations between the soldiery and their district became steadily closer, until all could regard themselves as part of the same society, and the military occupation changed from an alien domination to a territorial defence. A second important development was due to Caracalla's decision not again to occupy the Scottish lowlands, but to organize them as a sphere of influence. This was done by creating a strongly-occupied belt of territory north of Hadrian's Wall, closely corresponding with the later medieval border between England and Scotland. The chief posts were Netherby and Bewcastle in Cumberland and High Rochester and Risingham in Northumberland. On these forts, strongly manned and defended by the latest artillery, were based mobile frontier-scouts, patrolling a neutral zone and collecting information of tribal movements. Tactically, the effect of these measures was to abolish the need for two Walls and to restore the initiative to Roman hands. Politically, the border tribes became Roman protectorates, whose dependence is attested by the abundant Roman commerce which poured into their land. Behind the

ANCIENT ROME AND NORTHERN ENGLAND

Wall, the new cohesion produced by these changes of policy is significantly expressed by the cult of the territorial goddess Brigantia, expressing in Roman terms the sense of tribal unity and often coupled with an expression of loyalty to the Imperial House.

If the new political structure required further pressure to weld it, a sledge-hammer blow came at the close of the third century, when the recovery of Britain for the Continental Empire, after ten years' separatist rule, gave opportunity for invasion to the Picts from north of the Tay. The same cycle of devastation, repairs and punitive expeditions followed, but this time no frontier reform was required. Constantius I, in 306, left Caracalla's system unchanged. The only difference was that the disparity between legionaries and auxiliaries disappeared in sweeping army changes. Heavy cavalry, mobile in pursuit, began to take the place of the old infantry, slow but relentless in advance. These changes affected, however, the forts of Durham or Westmorland and the base at York rather than the garrison of the Wall, which remained grouped in traditional manner.

Meanwhile, the development of community instincts which was thus powerfully affecting the northwest corner of the Roman Empire was becoming reflected outside it. Just as the family instinct had once merged into the clan, and that of the clan into the tribe, so now, under pressure of folk-movements, the tribe was merging into the larger unit of nation. On the Continent, this tendency had been manifest in the third century. In Britain, it appears during the fourth, when the Picts became the paramount folk of northern Scotland. They now began to organize, in new and menacing fashion, forays upon the Roman world, whose wealth and prosperity drew like a magnet those who for themselves could organize neither. The first-fruits of the new movement was an unsuccessful Pictish attack repulsed by Constans in 343. Further raiding in 360 was followed by a combination of the predatory powers—Picts, Saxons from Germany and Scots from Ireland—in joint attacks upon the province in 367–369. All these movements seem to have won the treacherous connivance of troops in the outposts. The last series was fatally successful. The Wall fell and Brigantia was again wasted, in common with many districts hitherto unscathed by raiders. When the frontier was restored the outposts were not rebuilt, and the Government was content to leave the lands beyond the Wall in the guardianship of the native states. This new attitude was ultimately the result of Caracalla's policy described above. But it is also evident that the states concerned, embracing the Britons of Clydesdale

ANTIQUITY

and of Lothian, had achieved a new unity. Their paramount chiefs now appear for the first time in history, while their hill-towns reveal the continuation of no less close commercial relations with Rome.

The stage was now set for a final development. After the usurpation of Maximus (383-388), the Picts once more broke the Wall, though it is not clear how far their devastations spread. The Wall was not restored, though a vigorous punitive campaign took place. The Government delegated its responsibility for northern defence to the chief of Lothian, Cunedda, and retained in its own hands the forts of Durham county and of the Stainmore gap. The garrisons of these forts, as recorded in the late Roman army-list, had for some time been no longer regular troops but local militia, organized in irregular units whose very names betray their territoriality. There now followed in Brigantia a veritable Indian summer of prosperity. Towns and farmsteads were alike flourishing under the protection of their own people, organized by capable officials, while the coast was shielded from raids by a system of signal-towers created after 369 and working until the close of the century. The North had thus attained, just before the collapse of Central Government in western Europe dealt it a mortal blow, its first experience of local administration with modest responsibilities. The history of Roman power is seen no longer as a gradual weakening military domination, but as the triumphant fostering of communal instincts by a steady inculcation of responsibility, even in most difficult circumstances.

NOTE

This summary is based upon archaeological work carried out in the north of England during the last decade or so. It is not intended, however, to be a summary of that work itself, but rather the impressions of a historian reading it. The following references may be made to publications where the basic material is to be found.

**The Defences of the Roman fort at Malton*, by Philip Corder.

**A Roman villa at Langton, near Malton, E. Yorkshire*, by Philip Corder and J. L. Kirk.

**A Gazetteer of Roman Remains in East Yorkshire*, by M. Kitson Clark.

The Turf Wall of Hadrian, 1894-1934, by F. G. Simpson and I. A. Richmond.
Journal of Roman Studies, xxv, 1935.

Northumberland County History, vol. xv, 1940: *The Romans in Redesdale*, by I. A. Richmond.

The Roman Wall in Scotland, by Sir George Macdonald. 2nd edition.

The Agricolan fort at Fendoch, by I. A. Richmond and James McIntyre.
Proceedings Society of Antiquaries of Scotland, LXXIII.

* Published by the Yorkshire Archaeological Society, 10 Park Place, Leeds.

Beginnings of Civilization in Eastern Asia*

by CARL WHITING BISHOP

Freer Gallery of Art, Washington

TO understand the beginnings of civilization in the Far East, we must view them in the light of the laws that govern cultural progress everywhere. Especially must we consider the region's geographical position and relationship to other lands. As a glance at a map, or better still a terrestrial globe, will show, it occupies a marginal portion of the Eurasiatic continent taken as a whole. That this fact carries with it certain implications, the study of culture-building in general abundantly shows.¹

The sea-routes which link eastern Asia with the rest of the world we may ignore; for their development did not occur until long after the period of beginnings had passed.² There were, however, two great land-routes between East and West. Of these, one connected north-eastern India, by way of Burma, with western China; while the other—the famous 'corridor of the steppes'—extended eastward from the Carpathian Mountains and the Black Sea region right across most of Asia. These natural migration-routes, traversed in geological times by numerous animal and vegetable forms, in the human period by peoples, armies, and culture-traits, have always played a part of cardinal importance in the world's history.

Let us here call attention to another fact also in this same connexion. This is the striking uniformity in space, time, and general character that underlay all the great civilizations of antiquity, taken together.³

* Reprinted with the assent of the Editor of the Annual Report of the Smithsonian Institution, and of the Editor of the 'Journal of the American Oriental Society', no. 4, December 1939.

¹ On the effect of marginal positions on the growth of cultures, see e.g., Roland B. Dixon, *The Building of Cultures*, New York and London, 1928; ref. on pp. 272 et seq. and passim.

² Sea-going ships with sails are not mentioned in the Chinese records until the 3rd century A.D.

³ The late Dr Berthold Laufer discussed certain elements of this phenomenon in an important paper, 'Some Fundamental Ideas of Chinese Culture', *Journ. Race Development*, 1914-15, v, 160-74. [See also *ANTIQUITY*, 1932, vi, 118-20 and sketch-map].

ANTIQUITY

In the first place, they all arose in one continuous land-area—the north temperate zone of the Old World. They did so, moreover, almost simultaneously, speaking in terms of man's long total existence ; though they appeared at times successively later the farther we travel, east or west, from Anterior Asia. Again, they were all based on identically the same set of fundamental elements : the knowledge of copper or bronze, town-building, the use of wheeled vehicles,⁴ possession of the common domestic animals, the growing of certain cereals, especially wheat, and the idea of writing, in one form or another. Nowhere else did this group of culture-traits occur in similar combination ; in most parts of the world, indeed, they did not appear at all until introduced in recent historical times.

We may note that the area in question here coincided almost exactly with that portion of the earth's surface known to the ancients, either at first hand or at least by hearsay—the *orbis terrarum veteribus notus* of most classical atlases.

This uniformity, moreover, goes far back of recorded time. All through the north temperate zone of the Old World, but *nowhere else*, do we find the same general stages of culture-development—first an Age of Stone, then another of Bronze, and lastly one of Iron. In most lands, man passed from the Stone Age directly into that of Iron ; only in the region just named does a true Bronze Age occur.⁵

Now this homogeneity in fundamentals must signify something. How may we account for it ? Not, certainly, as the result of environment alone. For three other temperate areas of continental dimensions exist—in Africa south of the equator and in North and South America ; yet none of these has ever evolved a civilization of the kind named. Nor may we lightly dismiss the problem with the facile phrase, so often heard in such connexions, that ' men's minds work in pretty much the same way everywhere '. The reply to this assertion is, simply, that it cannot be true ; for, if it were, then we ought to find similar civilizations springing up in all parts of the world, at widely separated times.

On the vastly prolonged Palaeolithic Period or Old Stone Age in the Far East we need not dwell here ; for it has little discernible bearing on our subject.

⁴ Wheeled vehicles seem to have been developed in western Asia not later than the 4th millennium before our Era ; but they took two thousand years or more to reach Egypt—an instance of an exceedingly slow diffusion-rate.

⁵ To this fact, certain indigenous civilizations of Central and South America form only apparent exceptions.

BEGINNINGS OF CIVILIZATION IN EASTERN ASIA

With the succeeding Neolithic Period or New Stone Age it was otherwise. There came into being in Eastern Asia several distinct cultures of this general type, some of them traceable even today.⁶ The peoples possessing these were already members, in a broad sense, of those races that have occupied the region from prehistoric times down to the present.

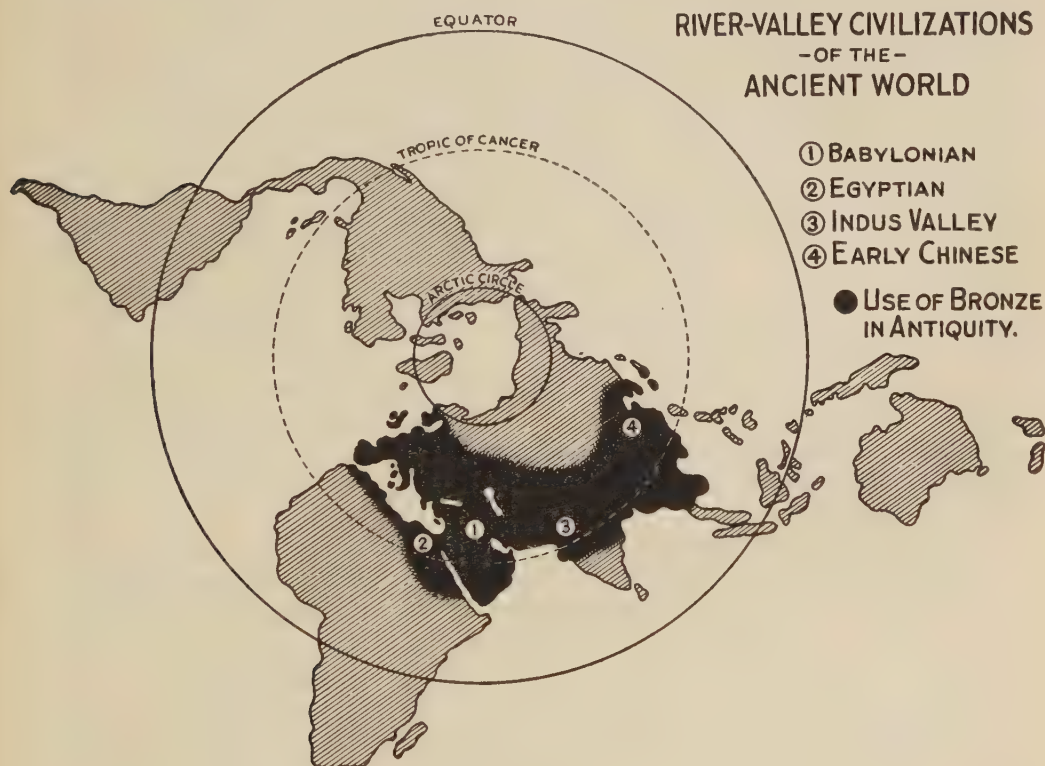


FIG. 1

The contacts of these Far Eastern Neolithic cultures seem to have been more especially with the northern portions of both the Old and the New Worlds.

A typical implement common to all parts of this vast area is, or rather was, a rectangular or semilunar stone knife, usually with one or

⁶ As regards China especially in this respect, see Dr Wolfram Eberhard, 'Early Chinese Cultures and their Development: a new Working-Hypothesis', *Smithsonian Annual Report for 1937*, pp. 513-30.

ANTIQUITY

more circular perforations. The use in winter of pit-dwellings or earth-lodges points the same way. Another culture-trait found both in Eastern Asia and in the circumpolar regions of either Hemisphere was the sinew-backed or compound bow. Other instances of a similar sort might easily be adduced.

Wherever climate, soil, and freedom from forest-cover allowed, the New Stone Age peoples of the Far East drew their sustenance mainly from what they could grow. Their chief source of food seems to have been millet (*Panicum miliaceum*); although rice appeared in Central China before the end of the period. Neither of these plants is indigenous to Eastern Asia; hence only as a result of culture-diffusion, almost certainly from or through India, could they have reached China. Rice spread to that country considerably after millet,⁷ and did not appear in the islands off the coast of Eastern Asia until later still.

On all save the youngest Chinese Neolithic sites, the only remains of domestic animals are those of the dog and pig. On the later sites occur also bones of the sheep and ox. Those of the horse are likewise reported on some of them; but whether these belong to domestic individuals seems uncertain. A true wild horse (*Equus przewalskii*)—not merely an animal descended from escaped domestic stock—still exists in Mongolia, and may formerly have ranged also over the northern Chinese plains.

These Neolithic planting peoples of the Far East made a coarse unglazed pottery, shaped by hand (most often, perhaps, by the 'coiling' process) and decorated with impressions of various kinds or with lumps and strips of clay stuck on before firing. Such ware seems, indeed, to have survived among the Chinese peasantry until far down in the historical period.⁸

Religion was pretty surely animistic in character. Among the planting peoples, at least, there seem to have been orgiastic fertility-rites, perhaps accompanied by human sacrifice. In many parts of the Far East, maiden sacrifice by drowning or exposure persisted even into historical times. Today the worship of goddesses appears most commonly in areas like the Eastern Asiatic coast and islands, regions marginal to the ancient Chinese civilization proper, and latest in being

⁷ Numerous indications, drawn from all parts of the Eastern Hemisphere, have led me to believe millet to have been the first cereal brought under cultivation by man.

⁸ Verbal communication from Mr T. Y. Ch'iu, of the Peking Historical Museum, confirmed by my own observations in the field.

BEGINNINGS OF CIVILIZATION IN EASTERN ASIA

influenced by it. The Japanese Sun Goddess, officially claimed as ancestress of the imperial line, is probably the best known example.

Indications exist too of a former matrilineal social organization, with 'priestesses' (really exorcists or medicine-women) and female rulers. Society in the Far East during the New Stone Age seems indeed to have borne a decidedly feminine cast.

On various Late Neolithic sites along or near the great trans-continental migration-route already mentioned, we find pottery much finer than the coarse variety named above. This is the now famous Chinese painted ware.⁹ Whether this was ever turned on some form of wheel or was entirely shaped by hand is still disputed; but it bore decoration in simple colours, chiefly red, black, and white. Designs, at first geometrical in character, later (in northwestern China at least) came to include naturalistic elements. With specimens of this latter class occur small but increasing numbers of copper or bronze trinkets,¹⁰ perhaps introduced by trade; these yield the first faint indications that metal, already long used in the Near East, was beginning to be known in Eastern Asia also.

This Chinese painted pottery seems not to have been accompanied by any distinct culture of its own. It bears rather the aspect of an individual culture-trait, detached from its place of origin. Many observers believe it to be related genetically to similar wares found in the West, particularly in South Russia. As to its date, several independent investigators ascribe it to the closing centuries of the third millennium B.C. Others put it later; but in so doing, they hardly allow time for what we know came later.

In northeastern China, not long after the Painted Pottery phase of the Late Neolithic Period, we find a culture different and somewhat higher in type, though retaining many earlier elements. This culture, still quite without metal so far as we know,¹¹ was characterized by a smooth black earthenware of fine texture and high finish. It had domestic cattle, sheep, and perhaps horses,¹² and displayed in addition

⁹ This was first made known to the world in 1922 by Dr J. G. Andersson, then of the Geological Survey of China.

¹⁰ The exact composition of these has, so far as I am aware, never been made public, welcome though such information would be.

¹¹ Metal may, however, have begun to appear in northwestern China, at the eastern end of the steppe-corridor; see footnote 10.

¹² See, however, what has already been said in regard to the horse in prehistoric Eastern Asia.

ANTIQUITY

several other features long known in the Near East but new in China. Among these was the use of the potter's wheel and the building of small towns encompassed by walls of tamped earth (*terre pisé*). These and other traits foreshadow elements in the Chinese Bronze Age destined soon to appear.

There follows a 'Dark Age', of unknown but certainly not long duration. Then, quite suddenly, we find ourselves confronted by a fairly mature civilization of Bronze Age type. How or where this came into being, we can not yet say; but we first find it in the basin of the Yellow River during the former half of the second millennium B.C.¹³

A number of traits, all of them previously long known in the Near East, now occur for the first time in Eastern Asia also. Among these was of course the extensive use of bronze itself for the purposes of war, ritual, and luxury (though little if at all for domestic tools and implements). Especially notable were the magnificent sacrificial vessels, used then, as long afterward, in connexion with the worship of the spirits of deceased ancestors.

There likewise now appears the growing of wheat, already long practised in the Near East (where that plant is native). The area ultimately embraced by wheat culture in antiquity coincides almost exactly with that in which bronze came to be used. Further, with two exceptions (both of them Mediterranean varieties believed to have been introduced by European missionaries in the sixteenth or seventeenth centuries),¹⁴ the wheats grown in China are precisely those cultivated along the steppe corridor and in the Near East.

We also now find in China the use of the chariot, drawn, just as in the Occident, by two horses yoked—not harnessed—abreast. There appears too a new style of architecture, with colonnaded and gabled buildings, sometimes of large size; although just as later, the pillars were of wood, not stone or burnt brick. We also now encounter a system of writing, obviously with a long period of development behind it somewhere, and ancestral to the present Chinese script.

The Chinese Bronze Age was thus by no means primitive or elementary. It was nevertheless decidedly more archaic in aspect, more impoverished in content, than the corresponding civilizations

¹³ On this dating, now generally accepted, see my paper, 'The Chronology of Ancient China', JAOS 52 (1932), 232-47; ref. to p. 246.

¹⁴ For this information I am indebted to a personal letter, of 4 January 1934, from Dr T. H. Shen, of Nanking University.

BEGINNINGS OF CIVILIZATION IN EASTERN ASIA

of the Occident. Such a state of affairs is however quite normal to a marginal area like the Far East.

With this somewhat belated appearance of a Bronze Age civilization in China, we reach the beginnings of that country's historical existence. The period is that of the Shang Dynasty—the first Chinese



FIG. 2. WHEAT CULTURE IN ANTIQUITY

ruling house of which actual remains have been identified.¹⁵ The line seems to have begun during the second quarter of the second millennium before our era.¹⁶

¹⁵ According to later Chinese legend, there was one earlier still—the Hsia Dynasty; but for the existence of the latter we have as yet no archaeological evidence.

Dr H. G. Creel has ably discussed the question of the 'Hsia Dynasty' on pages 97-131 of his *Studies in Early Chinese Culture*, Baltimore, 1937. See also my paper cited in footnote 13; ref. to p. 243. Dr Creel's conclusions and my own, though reached quite independently, are in essential harmony.

¹⁶ On this dating see my paper mentioned in footnote 13; ref. to p. 242.

ANTIQUITY

The Shang priest-kings, of primitive type, worshipped the spirits of their ancestors and also various divinities, of whom the chief was Shang Ti, 'the Ruler Above'.¹⁷ In war, they and their followers used spears, dagger-axes,¹⁸ and helmets of bronze, as well as compound bows and two-horsed chariots. As in the early Near East, political organization took the form of city-states, of which the one ruled by the Shangs themselves claimed allegiance and tribute from the rest. Incidentally, society was now, among the ruling class at least, organized on a rigidly patrilineal basis.

Sites of the Shang period have yielded no bronze swords. Evidently in China as elsewhere, these weapons appeared only relatively late in the Bronze Age. We do, however, find in China at this time two types of bronze implements of no little significance. One is the socketed celt,¹⁹ which in the Occident antedates the middle of the second millennium B.C. and has been traced there to still earlier forms. The other is the socketed spearhead, evolved in the West before the beginning of the same millennium from an earlier tanged type. Both implements, though absent from China in their more primitive stages, appear there fully developed during the Shang Dynasty.

Not long before the close of the second millennium B.C., the Shang Dynasty fell before invading peoples from the west headed by a group called the Chous.²⁰ The chieftain of the latter then made himself king of northern China—roughly, the basin of the Yellow River. There he set up a feudal organization, primitive in type but forming none the less a decided advance over the mere tribute-collecting system of the Shangs.

The Chous, too, worshipped their ancestors, and also various divinities, of whom T'ien, 'the Sky', was supreme.²¹ They seem

¹⁷ The two 'Shangs' in this sentence have quite different meanings, and are written in Chinese with distinct characters.

¹⁸ Bronze dagger-axes had been used in the Occident also before the invention of bronze swords in that quarter of the globe.

¹⁹ On the distribution of the socketed celt, see C. G. Seligman, 'Bird-Chariots and Socketed Celts in Europe and China', *Journ. Royal Anthropol. Inst.*, 1920, III, 153-8; ref. to p. 154.

²⁰ On the probable date of the Chou conquest, see my paper cited in footnote 13; ref. on p. 237.

²¹ T'ien and Shang Ti (the chief god, as we have seen, of the previous dynasty) were eventually equated with each other, much as Zeus and Jupiter, originally quite distinct, came to be identified.

BEGINNINGS OF CIVILIZATION IN EASTERN ASIA

likewise to have introduced into China the seven-day week²² and the employment of eunuchs as harem-guards—both traits believed to have originated in the Near East.

At or not long after the Chou conquest (the point is still undecided) there appeared in northern China the custom of erecting grave-mounds over the illustrious dead. This practice had already long prevailed in the steppe belt, from southeastern Europe far into Central Asia. In that area, just as eventually in China, mounds were heaped over tomb-chambers (of wood or stone) richly furnished with grave-goods ; and further, in both areas the bodies thus interred were covered with red pigment, haematite or cinnabar.

The Chinese civilization of earlier Chou times was the possession mainly of a small ruling class. The masses, on the other hand, retained much of the ancient Neolithic culture of their ancestors.²³ For this we have evidence both in ancient literary notices and in the abundance of stone implements and primitive pottery found on, or just beneath, the surface of the soil. Further, in line with what has already been indicated, while weapons of bronze are common on Chinese sites, industrial tools hardly ever occur.

For some three hundred years (*c.* 1050–770 B.C.) the Chou capital remained in northwestern China, just at the eastern gateway of the steppe corridor. The eighth century B.C. however, brought a fresh attack from the west, by a people known as the Jungs. This forced the ruling dynasty eastward, deeper into northcentral China. It thus lost its political power : but its sacerdotal character kept it in place for some five hundred years longer, until the third century before our era.

In the Near East, by the end of the second millennium B.C., bronze had begun to give place to iron. In eastern Asia the Bronze Age lasted until considerably later ; but it displayed from first to last a character backward and undeveloped by comparison with those of the Occident. Whole categories of bronze objects found on Western sites (particularly those of the Late Bronze Age) are rare or entirely lacking in China. Among such objects are bronze pails, sickles, hoe-blades, fish-hooks, razors, pins, fibulae, shields, trumpets, and many others.

Of such ' culture-lag ', the part played in ancient China by the

²² The Shangs, before their overthrow by the Chous, had used a ' week ' or day-period of ten days.

²³ On the survival of Neolithic types of pottery among the Chinese peasantry of early historical times, cf. footnote 8.

ANTIQUITY

bronze sword provides an excellent illustration. In the Occident that weapon, after undergoing a long and complex evolution from very primitive beginnings, had reached a developed form by the second millennium B.C. In China, on the other hand, the bronze sword does not occur at all until a thousand years later, after the Chou conquest.²⁴

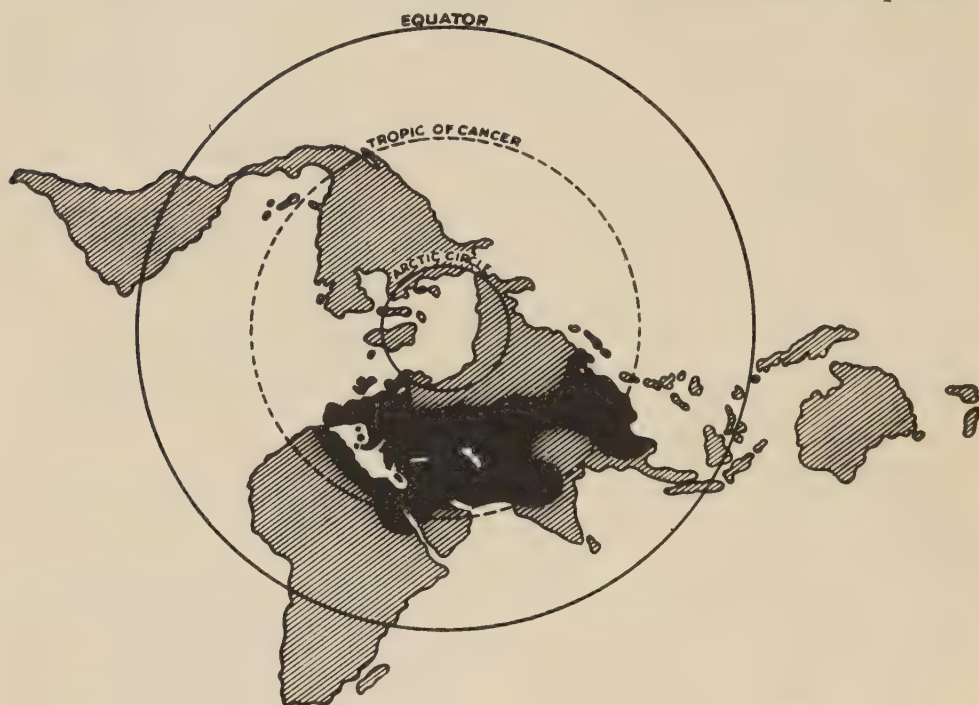


Fig. 3. KNOWN OCCURRENCE OF BRONZE SWORDS IN ANTIQUITY

In the Near East by that time it was already being superseded by the sword of iron.

The rather undeveloped type of bronze sword—in reality scarcely more than a dagger—found from Hungary eastward all along the steppe-belt was that which eventually appeared in China. It was undoubtedly

²⁴ On this point see, e.g., Olov Janse, 'Notes sur quelques épées anciennes trouvées en Chine', *Bull. Stockholm Mus. Far Eastern Antiquities*, no. 2, 1930, pp. 67-134; ref. on p. 93.

At the time when they conquered northern China, the Chous, like the somewhat earlier Vedic Aryans when they first occupied northwestern India, seem to have had bronze daggers but not swords. In many other ways also, the cultures of the two peoples present interesting parallels.

BEGINNINGS OF CIVILIZATION IN EASTERN ASIA

introduced into that country by the nomads—possibly the Jung people already mentioned as having attacked the Chous in the eighth century B.C. In any case, China lies almost at the eastern border of the bronze sword area, and the variety found there underwent far less evolution than did those of the Occident.

Another example of culture-diffusion is that afforded by the horse-drawn chariot. That engine of pageantry and war originated in western Asia, and spread thence both east and west over much of the north temperate zone of the Old World. It survived latest in marginal areas like China on the one hand and the British Isles on the other.

Certain species of animals and plants had slowly been brought under human control in the Near East before the fourth millennium B.C. Far later, many of the same forms appeared in China also, around the time when the Bronze Age itself began there. Whether they did so one by one at different times, or all together, as parts of an integrated culture-complex, we cannot yet say.

Be that as it may, few if any of these animals and plants were of native Chinese origin. Thus China has so far yielded no trace of a possible wild ancestor for her domestic ox. Again, the Chinese sheep appears not to be derived from the wild species which still occurs in the mountains of the northwest, but from a western wild form, the urial (*Ovis vignei*), also ancestral to certain early Occidental forms.

Nor does the Chinese domestic horse seem to be descended from the Mongolian wild form; it must, on the contrary, have been introduced, already domesticated, from some western region.²⁵

The domestic fowl, not identified on Chinese Neolithic sites but known by Shang times, must have come from India; for its wild ancestor, the red jungle-fowl (*Gallus ferrugineus s. bankiva*), occurs in that country but not in China. From India, too, seems to have come the basic stock of the domestic water-buffalo.²⁶

Moreover, not only did the ancient Chinese acquire most of their domestic animals as culture-loans from abroad, but they failed to

²⁵ The domestication of any wild species is an exceedingly slow process, while the horse does not appear in China until quite late. Further, certain details of conformation, particularly of the skull, suggest kinship with the Western domestic breeds and not with the Mongolian wild horse (*E. przewalskii*). That the latter has crossed with it to a slight extent seems certain, however.

²⁶ The Chinese water-buffalo shows far less modification under domestication than do the Indian breeds. It would seem therefore to have received a large infusion of the blood of the wild form which we know once occurred in China.

ANTIQUITY

make as full use of them as did, for example, the ancient peoples of the Near East. Thus, though a dairy-economy and the use of the ox-drawn plough had both long been known in the latter quarter, the one trait was never adopted by the Chinese, the other not until around the fourth century B.C.²⁷ Again, though the Chinese have had sheep

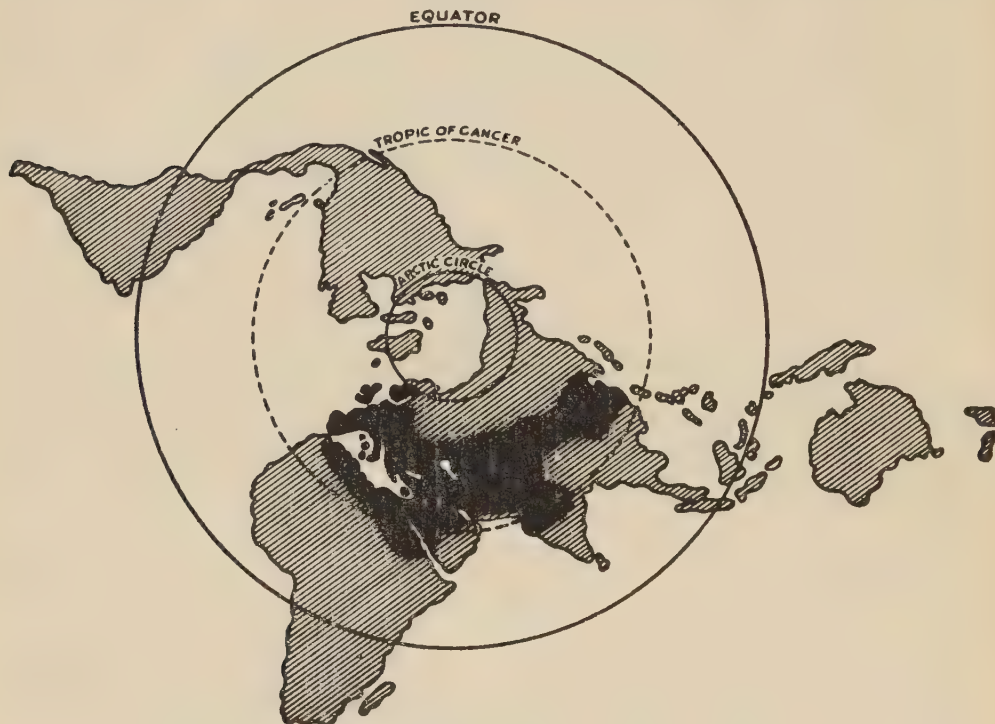


FIG. 4. KNOWN DISTRIBUTION OF THE WAR CHARIOT IN ANTIQUITY

from late prehistoric times onward, unlike the peoples of the Near East they have never made or used woollen cloth.

China's cultivated plants likewise have been derived largely from other lands. Millet, rice, and sorghum (*kao-liang* or 'giant millet') came from India, just as did sugar-cane and cotton later on. Wheat reached China, about the beginning of her belated Bronze Age, from

²⁷ On the latter point, see my paper, 'Origin and Early Diffusion of the Traction-Plough', *Antiquity*, 1936, x, 261-81; ref. to p. 278. The article has been reprinted in the *Smithsonian Annual Report for 1937*, pp. 531-47; ref. on p. 545.

BEGINNINGS OF CIVILIZATION IN EASTERN ASIA

the West. Similarly (though of course not until long afterward) maize, potatoes, tobacco, and other plants were introduced from the Americas. Instances of this phenomenon, in regard both to plants and to animals, might easily be multiplied.

By the first half of the first millennium B.C., an important cultural development, the rise of pastoral nomadism, had begun to take form

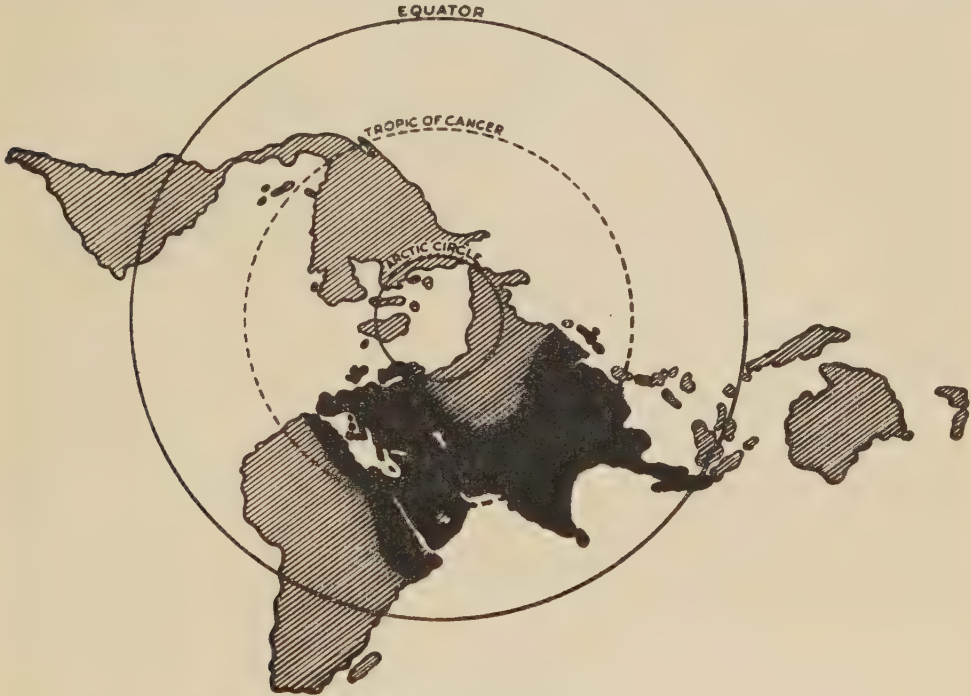


FIG. 5. DISTRIBUTION OF THE TRACTION PLOUGH BEFORE THE AGE OF DISCOVERY

in Central Asia. That region, as abundant remains show, was once occupied by a sedentary planting population similar to that of Neolithic northern China, already mentioned. Apparently about the time named, however, we find indications of a change. How far this was due to growing desiccation we do not know definitely,²⁸ but its form

²⁸ That *some* climatic change has occurred seems certain. On the fluctuations in level of the Caspian Sea, cf. Ellsworth Huntington, *The Pulse of Asia*, New York and Boston, 1907, *passim*. At the opposite end of Asia, northern Chinese Neolithic sites have yielded remains of warmth and moisture-loving animals (notably the water-deer, *Hydropotes inermis*) which could not survive there today.

ANTIQUITY

was determined by the acquisition of domestic animals—sheep and cattle—adapted to a pastoral and nomadic manner of life.

The predecessors of the present peoples of Central Asia seem to have gone about on foot.²⁹ They knew the horse-drawn chariots of their Chinese neighbours, but never adopted them, probably because their own cultural level was too low. During the earlier half of the first millennium B.C., however, first in western Asia, then a little later along the northern borders of China, we find a growing use of mounted troops. How this development took place, we cannot say; but the analogous one that occurred among the American Plains Indians when they acquired the horse from the Spaniards affords some illuminating suggestions.

In the Occident, bronze gave place to iron far earlier than in China. In the latter country the change did not begin until about the middle of the first millennium B.C., and was not completed until shortly before the commencement of the Christian Era.

Meanwhile the older metal had diffused itself, well beyond the limits of the ancient Chinese culture-group proper, into various marginal areas. In these the Bronze Age survived even later than in the Yellow River basin itself. Thus, in extreme southern China and the adjacent portions of Indo-China iron did not supplant bronze (under Chinese influence) until just after the beginning of our era. In Korea too we find a belated Bronze Age, introduced there from China probably during the Eastern Chou period. From the peninsula bronze soon spread to southern and western Japan; but before it had had time to reach the east and north of that country, iron overtook and supplanted it. These events marked the definitive close of the Bronze Age and the commencement of that of Iron in the Far East.

During the latter part of the Chou period Chinese feudalism gradually crumbled. Among the causes were the supplanting of the old chariotry (the arm *par excellence* of the feudal nobles) by bodies of militarily more efficient horse-bowmen, copied, as the old Chinese records expressly state, from the northern nomads, and the rise of a money economy which slowly replaced the ownership of land and serf labour as the source of wealth and power. There emerged in place of the older political system a number of large centralized states which waged frequent war on one another, and paid scant heed to the claims

²⁹ More than one ancient Chinese text, referring to wars with the northern barbarians even as late as the sixth century B.C., says 'They fight on foot, but we in chariots'.

BEGINNINGS OF CIVILIZATION IN EASTERN ASIA

of their nominal suzerains, the Chou kings. In this historical process the compelling need for the consolidation of authority over systems of hydraulic engineering—of flood-control and irrigation—played an important part. But the period, though thus politically unstable, was a most fruitful one in the development of Chinese civilization, particularly in the realm of thought.

During the third century B.C. there arose in northwestern China a great conqueror and organizer, Shih Huang Ti (to give him his later appellation), king of the aggressive state of Ch'in.³⁰ This man of genius subdued the other Chinese states and united them into a single centralized and bureaucratic empire, with himself as its absolute ruler—the most enduring political achievement ever wrought by man.³¹

Systems of government closely similar, even in their details, had arisen not long before in lands farther to the west—in Persia under Darius the Great, in India under Chandragupta Maurya. This new principle in state-building appeared in all three countries within a period of about three centuries, roughly 500–200 B.C. It did so, moreover, at successively later dates as we pass from the Near to the Far East.

With this founding of a centralized empire, the civilization of China, which became in time, incidentally, that of all Eastern Asia, was fairly launched on its great historical career.

In the foregoing paper we have purposely avoided attempts at interpretation, necessarily more or less subjective as these are. We have, on the contrary, simply stated ascertained facts, and allowed these to speak for themselves.

As we have seen, civilization appeared earliest in the Near East. There, certain animals were domesticated, certain plants brought under cultivation; there, too, various basic inventions were made and city-life first arose. To accomplish all this required a long period, probably of several thousand years.

In Eastern Asia we found things quite otherwise. Many of the above

³⁰ From the name of this state almost certainly came our own for the whole of China. Those who dispute this, usually on the ground that the latter name occurs (in India) earlier than the founding of the Ch'in *empire*, forget that the *state* of Ch'in had already annexed the eastern ends of both the overland routes which link China with the West.

³¹ The Chinese Empire lasted, in substantially the form devised for it by its creator, for over two thousand years—221 B.C.—A.D. 1911.

ANTIQUITY

culture traits appeared there too ; but they invariably did so far later, relatively speaking, at an already fairly advanced stage of evolution. Nothing has been found to suggest their independent origin there, while in certain instances we found definite evidence of their ultimate derivation from the West. These traits displayed in the Far East, moreover, just that archaic and fragmentary nature characteristic of marginal areas everywhere.

Mainly therefore, it would appear, to the stimulus imparted by cultural diffusions from the ancient Near East must be attributed the origin and fundamental type of that civilization which eventually took form in Eastern Asia. The case seems, in short, not to have been one of separate local invention, but of perfectly normal culture-drift, acting steadily, though most often imperceptibly, during hundreds, in some cases, even thousands, of years.

Roman Villa, Lockleys, Welwyn

by J. B. WARD PERKINS

THE Roman villa at Lockleys, Welwyn (the excavation of which was described in *Antiquaries Journal*, 1938, XVIII, 339-76), happened to provide more evidence than is usual of the character of the superstructures which once stood upon the surviving foundations. It has therefore seemed worth while to attempt a restoration-drawing of the house as it appeared in Roman times. The drawing, which is reproduced in the accompanying plate, is the work of Mr H. C. Lander, who has based it upon the results of the excavation, supplemented where necessary by analogies from other sites. It obviously cannot hope to claim complete accuracy of detail, but probably it does give a not wholly untrustworthy picture of a small middle-class native farmer's house in the late second or early third century A.D.

The restoration shows the house, viewed from the west, in the form in which it was rebuilt soon after the middle of the second century A.D. Its first-century predecessor was smaller and plainer. It had consisted simply of the rectangular central block, in front of which a row of timber uprights presumably supported the projection of the roof to form an open verandah. From the outside this building must have had very much the appearance of a large, half-timbered barn. The second-century rebuilding was extensive. Besides the re-decoration of the central block, it involved the addition of a projecting wing at either end of the façade and the replacement of the open timber verandah by a more substantial masonry construction.

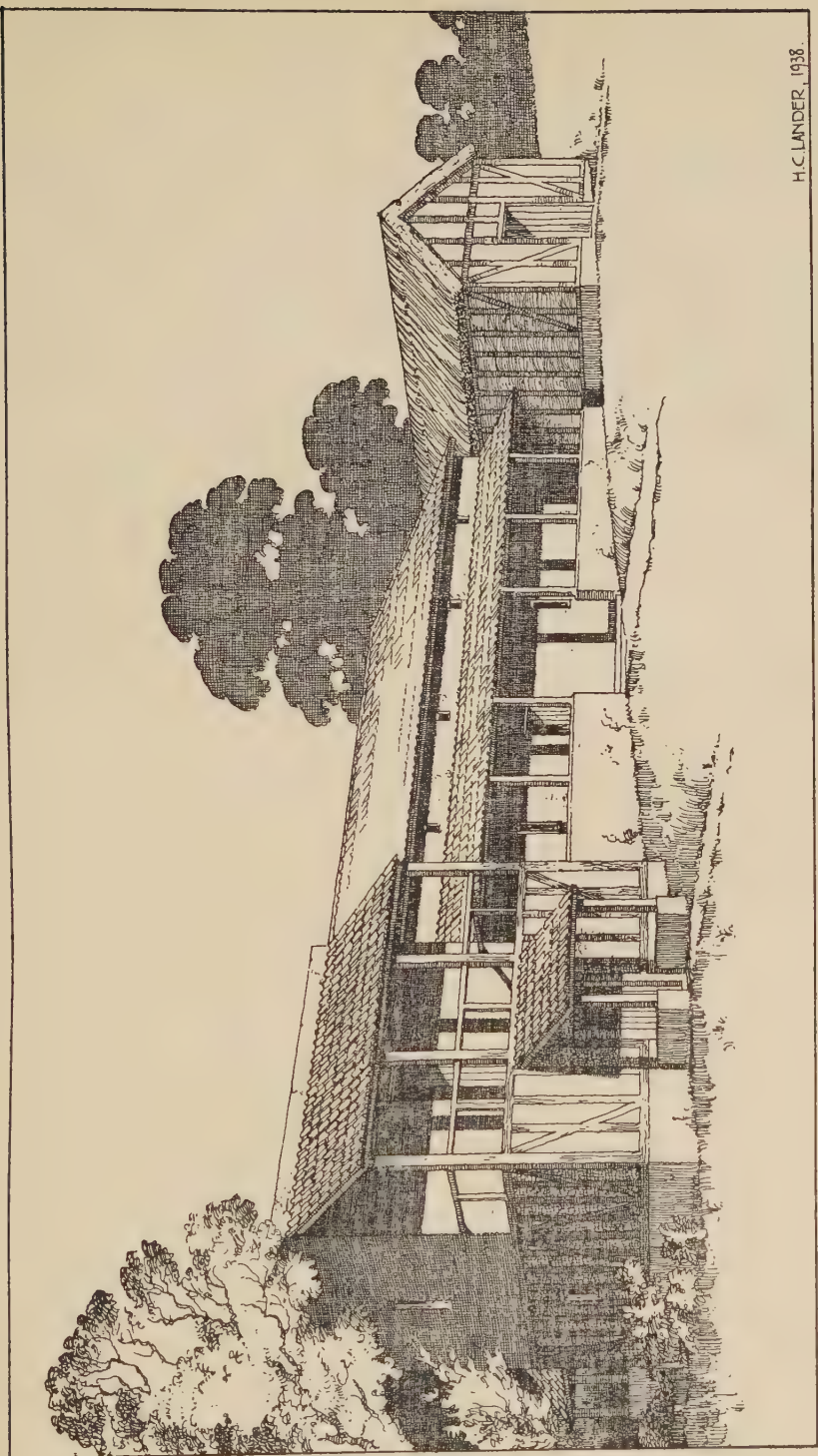
The building was almost certainly half-timbered throughout on substantial masonry foundations. The use of timber was demonstrated by the discovery of a charred beam in the débris of the collapsed wall of room 5 of the central block. The partition-walls of this block were also certainly of wood, for they were burnt down to foundation-level; and the collapsed débris of the two-storied room (no. 8) in the foreground contained a great deal of burnt wood and other matter, but very little masonry. Brick was used for bonding-courses in the necessarily rather elaborate foundations of this 'corner-tower', and also for the angles of the main block. But there is evidence to show that in the

ANTIQUITY

corner-tower, and therefore probably elsewhere, the upper parts of the walls were of some form of mud-construction. This use of mud and timber has survived until very recently in parts of the Home Counties, in Devonshire and in the *pisé-de-terre* farmhouses of northern France. It is capable of producing a comfortable and substantial building. It can be made more waterproof by the use of some external rendering, but this is not by any means essential.

The character of the central block was to some extent determined by the presence of a corridor in front. If its rooms were to receive any direct light other than from the back of the house (which was used as a rubbish-dump) the walls must have risen sufficiently high to allow for the insertion of windows above the roof of the corridor. Some part of the roof was tiled, for fragments of a number of roof-tiles were found ; whether any of it was thatched it is of course impossible to say. The corridor in front was probably half-colonnaded, for although the outer wall was continuous above foundation-level, it was considerably narrower than the other walls of the house. No trace was found of any columns, but these were probably of wood. In the centre of the corridor lay the main entrance. Of the rooms behind it only nos. 1-3 had elaborate flooring ; nos. 4 and 5 were roughly flagged with bricks, and this was evidently the part of the house reserved for the kitchen and perhaps for farm-purposes. The attribution is supported by the character of the pottery found here (*Antiquaries Journal*, 1938, XVIII, 349-50). The projecting south wing, of which only the barest foundations survive, was presumably of the same character as the adjacent rooms, and it is conjecturally so restored.

The most elaborate room in the house was no. 8 at the west corner. Owing to the slope of the ground the floor of this lay some 5 or 6 feet below that of the other rooms, and this fall was balanced by the addition of an upper room above it. This covered only one half of the room beneath, and presumably there was some form of verandah in front, probably, in view of the flat, concrete roof of the upper room, with a pent-roof rather than a gable. The lower part of this 'tower' was built of good flint masonry with brick bonding-courses, the upper part of timber and some form of mud-construction. The lower room had no communication with the rest of the house and was entered by a porch set in the middle of the front. Internally it was decorated with a tessellated floor and multi-coloured wall-plaster, and the upper room also had a plain, dark-red plaster. The disposition of the windows is of course conjectural.



RESTORATION-VIEW OF THE ROMAN VILLA, AT LOCKLEYS, WELWYN, IN THE SECOND CENTURY A.D.
By courtesy of Mr Philip Coraer

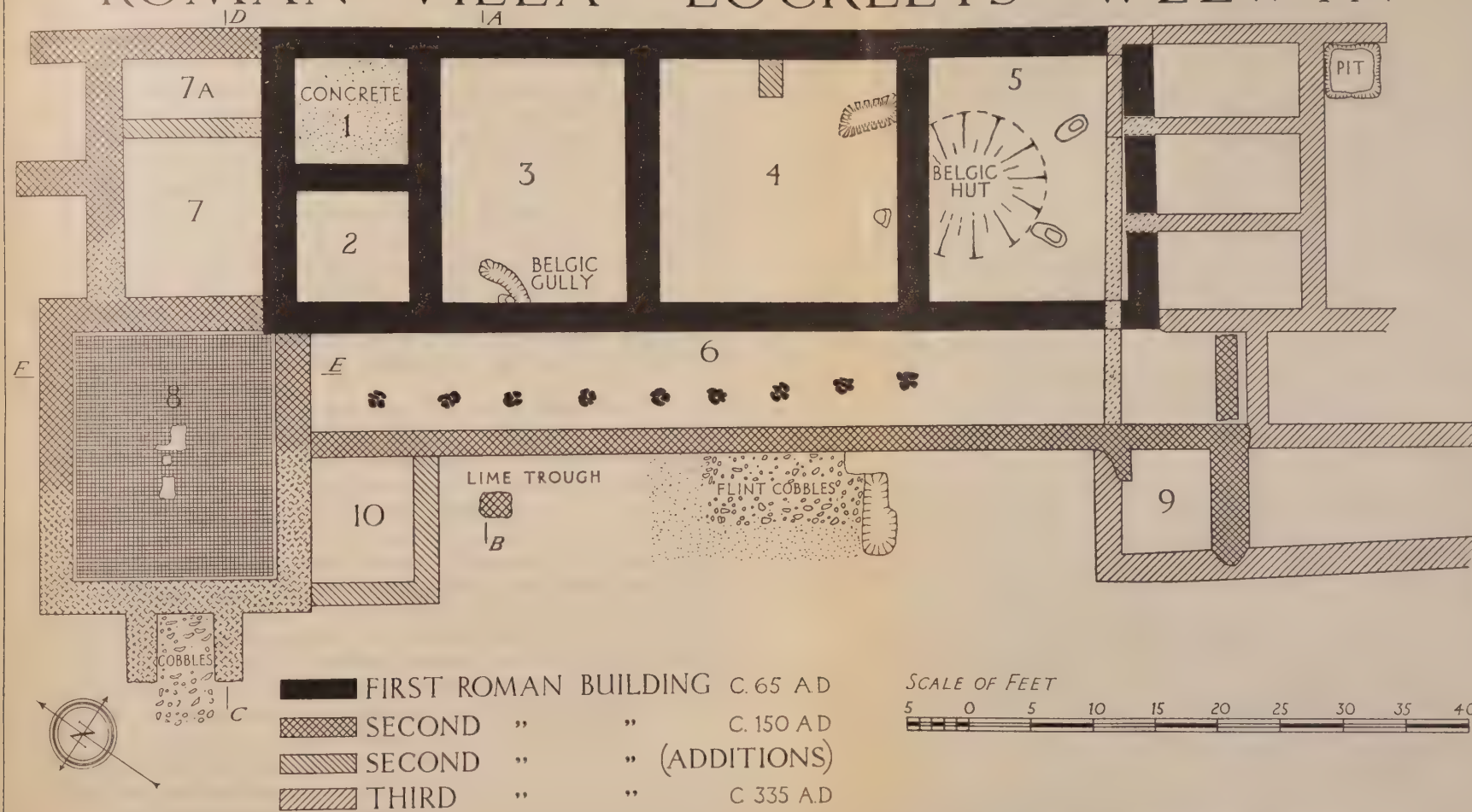
ANTIQUITY

No other buildings were found during the excavation. Portions of flue-tiles indicate however the existence of a separate bath-building : and within the circuit of the enclosing fence and ditch, which was traced to the south and west, there were no doubt other wooden farm-buildings, analogous to those identified in the villa at Ditchley, Oxon. (C. A. R. Radford, 'The Roman Villa at Ditchley', *Oxoniensia*, 1936, I, 24-69). To judge from its ground-plan the Lockleys villa was of a type common in Roman Britain. The existence of a second storey in the corner 'tower' may well be exceptional. It is amply explained in this case by the configuration of the ground, and its use elsewhere still requires demonstration. In other respects however the Lockleys villa probably does provide a fair picture of the type of small farmhouse that was the backbone of the Roman villa-system in this country.





ROMAN VILLA LOCKLEYS WELWYN



By courtesy of the Society of Antiquaries of London

Reviews

FANGKULTUR UND MEGALITHKULTUR IN DER SÜDSKANDINAVISCHEN STEINZEIT. By OTTO RYDBECK. *Meddelanden från Lunds Universitets Historiska Museum*, no. 1, pp. 1-146, 35 figs., of *Bulletin de la Société Royale des Lettres de Lund*, VI, 1937-8. Price not stated.

In the last few years many first-rate works have been published on the Neolithic period in northern Europe. Sprockhoff's *Die Nordische Megalithkultur* and Nordman's *The Megalithic Culture of Northern Europe* have already been discussed in these pages,¹ and more recently Dr Brønsted has given us in volume 1 of his *Danmarks Oldtid*² the first detailed account of Denmark in the later Stone Age. In the present work Professor Rydbeck surveys the later Stone Age in southern Scandinavia, concentrating his attention on the south Swedish material, and in particular on the interrelation there of the Megalithic culture and what he terms the Fangkultur (Swedish Fångskultur)—the hunters, fishers and collectors usually known as the Wohnplatz or Sammler Culture. Rydbeck's book is a valuable and welcome addition to the recent literature in this field, and is the more stimulating in that it is often sharply critical of the views of Nordman and Brønsted.

Rydbeck first outlines the development of the classification of the Stone Age in northern Europe: he re-affirms Stjerna's doubts as to the validity of Montelius period I which has recently been reinstated by Brønsted, and does not allow the early date given by Brønsted to the pointed butt axeheads, to some of the corded beakers, and to the Virring single grave. He then gives a good account of the Swedish megaliths and publishes new distribution-maps which will now supersede the earlier maps of Montelius, Alin-Sarauw, and Åberg. The Swedish megaliths are concentrated in three main areas (1) the Falbygden area of Västergötland; (2) Bohuslän with the islands of Orust and Tjörn; and (3) Skåne, with some few tombs in Gotland and along the coast from Skåne north to Bohuslän. Rydbeck stresses the poverty of Sweden in megaliths when compared with Denmark: Skåne has only 30 dolmens and 50 passage-graves, Bohuslän has only 47 dolmens and 33 passage-graves, and the Falbygden area is the largest concentration with 234 passage-graves.

Nordman, faced with the difficult problem of finding an origin for the northern dolmen, concluded rather unsatisfactorily that it was the embodiment in northern Europe of the idea of communal burial in megalithic tombs diffused from western Europe. Rydbeck very properly criticizes this view and reverts to Montelius' position, stressing the existence of dolmens in Brittany, England,

¹ See Daniel, 'The Megalithic Tombs of Northern Europe', *ANTIQUITY*, 1938, XII, 297 ff.

² Copenhagen, 1938. (Vol. I reviewed *ANTIQUITY*, March 1940, pp. 88-91).

ANTIQUITY

Wales, Scotland and Ireland—but this view is no more satisfactory than Nordman's: it remains true that nowhere in western Europe can be found accurate parallels to all the morphological features embodied in the northern dolmen. Rydbeck realizes well that the grave-goods of the dolmens cannot be paralleled in western Europe. He cites the Breton collared flasks, but is inclined to see no connexion with northern Europe: he also quotes the pot from Liff's Low (Biggin) in Derbyshire as a possible collared flask; but as both Childe and Piggott have pointed out,³ this is rather to be regarded as a 'sport' in the Peterborough tradition.

Rydbeck develops here his theory of the multiple transgression of the Littorina sea which has now been generally accepted, and which emphasizes the contemporaneity of the late Mesolithic cultures with the first megaliths. He argues again for continuous land in the North Sea as late as the first megalithic movements, but neither this view nor his chronology seem likely to be accepted. Nordman put the beginning of the megalithic culture in northern Europe at a century or two before 2000 B.C.; Rydbeck pushes the beginning back to 2500 B.C. It is a great pity to find Rydbeck, and Brønsted too, reverting towards a Montelian chronology, and allowing a period of 200 or 300 years for Montelius period II, of whose separate existence he entertains no doubts. Rydbeck criticizes Brønsted's reinstatement of Montelius period I, but he pays scant attention to the implied criticisms of period II with which Brønsted's work provides us. Thus Brønsted lists only 57 dolmens in Denmark with grave-goods alleged to be earlier than the passage-graves; and it is surely most significant that whereas only 6 dolmens in Denmark have yielded grave-goods characteristic of the older passage-graves, no less than 25 have yielded grave-goods typical of the younger passage-graves. Rydbeck does not consider the implications of these facts brought out by Brønsted's maps, nor does he attempt to explain the occurrence of 'dolmenic' grave-goods in the Dutch and north-west German tombs of late period III and IV. It is a matter for regret that in such a careful study of the south Swedish Neolithic, Rydbeck did not include a detailed analysis of the grave-goods from the Swedish dolmens: it would have been most informative.

G. E. DANIEL.

FROM 'DAWN' TO THE 'ECLIPSE': the story of the Horse. By CECIL G. TREW. *Methuen*, 1939. pp. 142, 16 plates and 100 line illustrations. 12s 6d.

This is a book by an artist and lover of horses. It deals not only with the horse and its history, but also with all the relations of horse to man, thus conveniently assembling much material that would otherwise be somewhat

³ *Arch. Journ.*, 1931, p. 132.

REVIEWS

inaccessible. It gives an easily comprehensible and interesting account of facts relating purely to natural history which are perhaps somewhat off the ordinary beat of readers. The author's illustrations give effective support to the text and are of value in themselves, for he has shown much industry in drawing upon works and collections relating to natural history and the history of art and culture. Unfortunately, the fact that only English authors have been consulted makes the work rather one-sided: such important researches as those of Adametz, Antonius, Vetulani and others are ignored, and one even misses the name of such an authority as Ewart. The somewhat confused account of evidence for the Nubian wild ass being found on the island of Socotra needs correction, for the animals there are merely domestic asses run wild. Further, where the domestic horse is alleged to go back to only two wild species, it should at least have been stated that others hold different views. But these are small points, which concern the specialist alone, and do not mar the effect for the general reader.

The author develops the paleontological evolution of the horse from the Eocene five-toed terrier-sized *Phenacodus primaevus* and the somewhat later *Eohippus* of West America, the 'Dawn Horse', to the normal single-hoofed animal of today, and then treats of domestication. There were two separate types, the northern or Dun and the southern or Barb. The former subdivides into Przewalski's horse in the east and the Tarpan in the west; from these three types, either direct or through crossing, modern breeds evolved. There is an account of the horse in the Ancient East and among classical peoples, and a chapter on harness and accoutrements—bit, stirrup, saddle, etc. The last section is concerned exclusively with the horse in England; here the influence of the oriental breed and the evolution of the thoroughbred are well in the foreground, while the heavy horse is rather neglected. The book concludes with a comprehensive retrospect, and an idealistic picture of future development.

M. HILZHEIMER.

THE LABORS OF THE MONTHS IN ANTIQUE AND MEDIEVAL ART. By JAMES CARSON WEBSTER. Princeton Monographs in Art and Archaeology (Princeton), 1938. pp. 185, and 64 plates. \$10 post paid.

In the first three chapters an examination is made of the most important artistic representations of the seasons during late Roman times, the Dark Ages and in the Romanesque period. It is followed by certain literary exercises on the same theme; and perhaps the most valuable section of the work is a long catalogue of the representations of the seasons now surviving, with their exact locality and with notes on the significance of the actual figures and symbols portrayed. The 64 plates illustrate the sculptures, mosaics, etc., which are cited in the text.

ANTIQUITY

A corpus of illustrations of medieval life is thus presented, which is of value in many ways besides that for which it was assembled. It provides a further measure for assessing the debt of medieval art to the ancient world, both in the West and in the lands of the eastern Roman Empire. The illustrations offer material for studies on methods of husbandry, and country customs. We note that it is only in the English cycles that the occupation of weeding is portrayed: the 'green and pleasant land' seems to have changed little in this respect. Both author and publisher are to be congratulated on this book.

DINA P. DOBSON.

EXPLORATIONS IN EASTERN PALESTINE, III. By NELSON GLUECK. Annual of the American Schools of Oriental Research, vols. XVIII-XIX, for 1937-9. Published by the A.S.O.R., New Haven, 1939. pp. 288, plates, maps, and figures.

This volume represents results obtained by field-work during the years 1936-8, and it should be said at once that the results are copious and valuable. It covers an area that is inaccessible, almost unknown, and yet full of remains of all periods. The present survey is a valuable pioneer reconnaissance carried out under the direction of the American School of Oriental Research with the co-operation of the Transjordan Antiquities Department and the Royal Air Force. The term 'Eastern Palestine' is puzzling, since the survey was confined to the region east of the river Jordan.

Transjordan is, perhaps, hardly better known today to the average European than was 18th-century Scotland to the average Englishman; but Pennant—Dr Glueck's opposite number in the 18th century—was without those modern instruments of research—the car, aeroplane, and camera—nor of course had he any archaeological basis with which to build upon and date his sites. Dr Glueck's narrative is packed with detailed information, presented in a strictly objective scientific form, so that the work of the excavator and air-photographer who will, we hope, some day follow him has been immensely facilitated.

A detailed review of such a work as this is quite impossible, particularly at a time like the present. We can only select one or two points of outstanding interest. Of these the most remarkable is the air-photograph on p. 152 of 'elaborately terraced and walled fields resembling tremendous checker-boards' at et-Telâh. The fields are rectangular and perfectly preserved in plan. The air-photograph, an oblique, hardly does justice to the subject; but we know only too well the technical difficulty of obtaining the best results during pioneer-work of this kind. A vertical photograph, or rather a series of such, taken when the sun is low, would be most illuminating. I saw similar walls in 1930 from the summit of Umm Keiss in the north of Transjordan, belonging probably to the

REVIEWS

Roman town of Bosrah, and appealed, though in vain, for an air-survey of them. Hardly less sensational is the Roman road leading from Kathrabbā to the Dead Sea, which in one place is constructed apparently in a series of hair-pin bends along a ridge between two small ravines. These photographs show us what amazing archaeological wealth is awaiting the first person who is rich and enterprising enough to explore Transjordan with an aeroplane and camera, and to do for it what Major Allen has done for England, namely, to make discoveries and record them with the necessary technical skill. They also cause us to wonder what is done with these R.A.F. negatives after they have served their purpose. They should be deposited in a central store-house, where prints can be made and supplied to archaeologists without undue difficulties or delays; otherwise the labour and expense of taking them will have been thrown away for lack of an expenditure that is relatively trifling. The responsibility for organizing some such scheme rests primarily upon British archaeologists.

O.G.S.C.

ANGLO-SAXON CAMBRIDGESHIRE. By T. C. LETHBRIDGE. Reprinted from the Victoria County History of Cambridgeshire and the Isle of Ely, vol. I, 1938. *Price not stated.*

The author acknowledges his debt to Sir Cyril Fox's *Archaeology of the Cambridge Region*. He has not duplicated the information therein, but has rather concentrated on material discovered since the publication of Sir Cyril's book.

A large part of the chapter is concerned with Anglo-Saxon burials, both pagan and probably Christian, and with the consideration of the finds associated with them. There are also useful notes on the relations between the remains of Romans and Anglo-Saxons; on the sites of cemeteries and houses; and on weapons and their incidence. There is also a list of Anglo-Saxon sculptures, and another of the numerous finds in the county of the Viking period.

The illustrations include the author's own sketches, and some good photographs of pots, weapons and jewellery. The sites and finds are plotted on a coloured quarter-inch map in a very conspicuous way.

Mr Lethbridge is able to supply references to papers which he has already published on this subject, and the reader feels throughout that this is a summary based on far wider information and knowledge than can appear in the limited space which is allotted.

DINA P. DOBSON.

EGYPTIAN ARCHITECTURE. By FLINDERS PETRIE. *Bernard Quaritch*, 1938. *pp. 95 and 34 plates. 7s 6d.*

Even a life as long and as productive as Petrie's is too short to accomplish everything; other scholars have contributed so much to the history of Egyptian

ANTIQUITY

culture that no one man can have mastered every phase of Egyptology. Such is always the dilemma of archaeological scholarship, and, as Petrie says, *Egyptian Architecture* was written largely from personal observation. The treatment of the subject is further limited by the author's interest in only the engineering aspects of Nilotic building methods. In defining the 'scope of architecture', he chooses a quotation from Vitruvius which reads, 'Architecture consists of three branches, namely, building, dialling and mechanics'. Although the quotation has its limitations, and does not express the Roman architect's realization that architecture is also an aesthetic and social art, still it clearly indicates Petrie's approach to the subject.

Throughout the book the value of the ideas and information is frequently lessened because the author seems too pressed for time to make his generalizations express exactly what he intended. In the chapter on 'Brickwork' he writes, 'It will be seen that all these bricks are half as wide as the length, also the width may be greater than half the length'. The clarity of this sentence is still further lessened by the fact that, according to his table of brick dimensions, the width may also be somewhat less than half the length. In the same way the sentence, 'an unplastered brick wall will readily rock to and fro; but with a coat of mud plaster on each face it becomes a girder with two faces and solid ties between', needs both qualification and clarification. On the other hand, the exposition of how the Egyptian builders attained a uniform slope on all sides of a mastaba is typical of his insight into Egyptian methods of building. Also he offers a better explanation than any other writer why it was that the Egyptians so frequently built their walls with concave and convex courses.

When discussing 'Wood in Brickwork', he writes, 'Straight beams were very rarely let into walls, as foreign wood was too costly to be used; but it is usual in Arab times as a bond or tie'. In view of the conservatism of Egyptian habits, it is most unlikely that the idea of wood bonding was introduced by the Arabs, and it is doubtful if wood was less expensive in Arab times. As early as the Third Dynasty, the records tell of forty ships laden with timber which were brought to Egypt. In fact, the use of successive bands of wood bonding in the brick walls of Egyptian forts, and in the houses at Karanis and Soknopaiou Nesos, prove that it was a customary means of wall construction. At Amarna, recent excavations have indicated the use of horizontal bands of wood, about a metre apart. When Petrie first published the house models of Rifeh, he suggested that the horizontal lines of red paint on the houses represented brickwork. Inasmuch, however, as red was the Egyptian symbol for wood, and since Egyptian bricks were always grey-black, rather than an English red, it is probable that the red lines indicate bands of wood bonding. The chapter entitled 'Reed, Palm and Wood' contains many pertinent observations on the importance

REVIEWS

of 'organic materials' in the beginnings of Egyptian architecture. Granting, however, that 'wood was largely used in early constructions', it is somewhat misleading to say that 'the great royal tombs were entirely of massive timbering' (p. 17). Regarding tombs, Petrie does not mention the very recent find of the actual tomb of Menes at Saqqara, and so cannot discuss its bearing upon his identification of the Royal Tombs at Abydos. In order to account for the important and extensive use of wood during the early history of Egyptian architecture, he offers the statement by Floyer that there was much more wood in ancient times, 'before the camel extirpated the desert flora'. No one, of course, likes the camel; but should not this particular responsibility be shared with climatic changes which were producing a desiccation in both Africa and Asia?

The chapters 'Stonework', 'Transport' and 'Stone Construction' contain many valuable observations upon Nilotic building traditions. Petrie's long experience supervising native workmen makes his explanation of Egyptian methods of handling great blocks of stone most illuminating. At the same time many of his condensed statements of fact are questionable. A. Lucas, the author of *Ancient Egyptian Materials and Industries*, would not agree with his statement that the Egyptians of the Old and Middle Kingdoms hardened their copper for stone cutting by arsenic, for Lucas writes, 'The only constituent added intentionally to copper in Egypt was at first tin . . . and at a later period lead. . . .'. It is an overstatement to say that the 'dovetails or cramps were usual in stonework', especially when it is later qualified by the sentence 'it is doubtful if ever cramps were much used in limestone work' (p. 48). In fact it is an exaggeration to say that 'the sandstone buildings of the 18th and later dynasties may be seen to have every block of walls and roofs cramped to the next'.

The treatment of 'Forms of Support' is far from exhaustive; although it gives a series of tables showing the dimensional variations of different types of supports during the successive periods of Egyptian architecture. The measurements are largely estimated from photographs and suggest a rule of thumb which lessens the accuracy of the conclusions. Some readers will find it confusing to read that the Zoser shafts at Saqqara are 'Hathor columns', although this interpretation has been advanced by several scholars, especially when Firth and Lauer have shown that the bosses on these shafts, which to Petrie suggest the breasts of the Cow-goddess, were presumably supports for a wooden bracket. In the same way the chapters on 'Strength of Materials' and 'Roofing' would be much more valuable if it were not for the haunting suspicion, born of the fact that the dimensions in the different tables do not always agree, that the data were somewhat hurriedly compiled.

ANTIQUITY

The reviewer cannot agree that the arched roofs in the rock-cut tombs at Beni-Hasan were 'most likely copies from brickwork'; instead, it is now generally thought that these interiors are a sculptured reproduction of the wooden hoop roof, covered with matting, of the houses of the Oryx district. The same difference of interpretation applies to the Rifeh 'soul houses', which Petrie calls models of 'Peasants' Houses'. He describes them as frequently reproducing dwellings with actual arched roofs of brick; again, it fits the evidence of domestic architecture in Egypt to consider them as reproductions of hoop construction. In the last chapter, on 'Plans', even with the material limited to what had been acquired by first-hand experience, it was attempting too much to compress houses, mansions, villas, palaces, temples and tombs into thirteen and a half octavo pages. After reading Petrie's letter at the end of the book, however, one is ready to overlook all the limitations of *Egyptian Architecture*. Instead one can only feel the deepest sympathy for the aged scholar's determination to raise money in order to carry on his excavations in Palestine.

E. BALDWIN SMITH.

THE BAILLIWICK OF JERSEY. By JACQUETTA HAWKES. *Société Jersiaise, Jersey*, 1939. pp. xvii, 320. 25s.

This is the second volume of the *Archaeology of the Channel Islands* and completes the work commenced by Mr T. D. Kendrick's *Bailiwick of Guernsey* (1928).*

The contents follow generally the arrangement of Mr Kendrick's volume—a general survey of the archaeology of the island; a geological and archaeological survey of the Quaternary period; finds and sites arranged by types and divided into Megalithic, and post-Megalithic; and a descriptive catalogue of sites. The last occupies more than half the volume, and is based in part on notes made by Mr Kendrick. The careful summary of such data as are reliably recorded for each excavated site places future discussion of the problems of Jersey on a sure foundation. Parts II and III include a number of critical and comparative essays on particular aspects of the prehistory of the island which are a valuable supplement to the general account in the introduction.

The archaeological record of Jersey is singularly patchy, at least so far as it has yet been revealed by intensive, if unscientific, excavation. It begins in the Middle Palaeolithic, when Jersey was certainly a part of the continent. Thereafter a long gap occurs until the Megalithic period, when the author considers it possible that the ten-fathom channel, which now divides the island from France, was again elevated above sea level. After a long continuing Megalithic period Jersey sank to a relatively low cultural level, as would befit an area which

* Reviewed ANTIQUITY, 1930, IV, 126.

REVIEWS

was again an island, and one by then occupying no important position on a route of maritime adventure.

It is thus in its Megalithic period that the archaeological significance of Jersey is greatest, and for that this book is of the first importance. It presents intriguing problems, notable among which is the contrast which the author is able to point between Jersey and Guernsey. Jersey produces pottery of Chassey affinities, while vase-supports are the predominant furniture of the great tombs; Grand Pressigny flint is common; and there is at least one port-hole cist. In Guernsey all these cultural traits are absent, or virtually absent. Beakers, which seem to be the primary furniture of the great tombs in Guernsey, occur sparsely in Jersey except at one site which was probably a long cist. Thus while Guernsey's culture is clearly of Atlantic origin, much of Jersey's might be derived either from Brittany or from Central France. It is tempting to link this fact with Jersey's supposed peninsular situation and to infer influence from the south and east which did not reach the insular Guernsey. Mrs Hawkes is inclined to yield to this temptation, but it is questionable whether it ought not to be resisted.

We should be on firmer ground if we knew the culture sequence, and in particular the pottery sequence, for the island. Most valuable light is thrown on this by an analysis of the finds from the unpublished occupation-site of the Pinnacle, the only site in Jersey for which reasonably reliable stratification evidence exists. There, pottery of Chassey affinity occurred in a determinate stratum below an occupation-site producing a finger-tipped, applied band-ware, a few beaker sherds and Grand Pressigny flint. While the Chassey-like pottery does not occur at other sites it is presumably contemporary with the vase supports which form the principal furniture of the great chamber-tombs.

It seems therefore that the earliest pottery both at the Pinnacle and in the chamber-tombs was of Chassey affinities, and that this preceded beakers. Despite the similarity which Mrs Hawkes points out between this Chassey ware and that from the earliest occupation of Fort Harrouard in southeastern Normandy, it would not be impossible, as she observes, to derive this earliest material culture from Morbihan (Er Lannic and Croh-Collé), and to suppose that Jersey was first repopulated, as Guernsey seems to have been first populated, by the sea route from southern Brittany. The tombs must be so derived, since they have no analogues in the neighbouring areas of Normandy, and, on the principle of economy in hypothesis, it is questionable to postulate two irruptions of closely related cultures into this small area from different directions at the same time.

Analysis of the undecorated, round-bottomed pottery produces only inconclusive results. This pottery appears in the lowest level at the Pinnacle and in some tombs. In form it can be paralleled in more than one area

ANTIQUITY

and in particular at Er Lannic in Brittany, where it occurs with vase-supports. Mr Kendrick judged the similar vessels in Guernsey to be not earlier than beakers and not primary in chamber tombs. In Jersey they must be as early as the Chassey-like ware, but evidence is lacking that they were any earlier. They occur indeed as the sole furniture of the 'beehive hut' at La Sergenté, which Mrs Hawkes must be right in recognizing as a corbelled tomb, but the belief that a chamber tomb is early because it is corbelled is on present knowledge an act of faith.

Another element in the pottery sequence which is probably contemporary with beakers is the 'Jersey bowl'. This is a flat-bottomed, hollow-necked vessel with a relatively low carination, above which is a band of decoration composed of groups of horizontal incised lines arranged in panels. Mrs Hawkes is doubtless right in regarding this singularly uniform type as a local development; but the band of decoration is a common feature in Languedoc, where it occurs in the rock-cut tomb of Arnaud near Arles and in numerous caves (St. Vérédème, St. Joseph, la Sartanette, St. Anastasie). From the absence of such decoration along the Rhone route it seems likely that this pattern reached Jersey by the Garonne and the Atlantic.

Valuable discussion is given to the finger-tip, applied-band pottery, which occurs stratified with beakers and Grand Pressigny flint at the Pinnacle site. This is associated with the finger-tip and nail-ware of the 'upper neolithic' level at Fort Harrouard, but it is not clear that applied bands occur at that site. This type of ware stretches from Spain across the Midi to Italy and Macedonia, and extends up the Rhone to Chassey and thence, sporadically, to northeast France and southwest Germany; in the west it reaches Peu Richard near the mouth of the Garonne. It is preceded in Languedoc by the plain and the groove-decorated families which already embody applied cordons, a feature occurring, in the shape of applied strips, on Breton carinated bowls. Its area of fullest development was the Pyrenees, where finger-tipped bands garlanded big jars and flower pots and ultimately came to be enriched with clay rosettes.

Mrs Hawkes will not allow the Atlantic route, with its severe and indeed religious traditions, to have been the channel by which these ceramic extravagances reached the northwest. Their appearance in the Orkneys in a form which Professor Childe long ago pointed out to be Pyrenean is, however, difficult to explain otherwise now that at last it is permitted to claim Skara Brae as an Early Bronze Age site. The still more flamboyant form of the style which appears on the Irish encrusted urns corresponds closely with the latest Pyrenean developments. And it is at least possible that Wessex owes the applied band style of Woodhenge to the same Atlantic source, though it is mixed at that site with the grooved and dotted style which at Skara Brae preceded it.

REVIEWS

If this be true for Britain it is possible that Jersey also derived its applied band pottery from the same Pyrenean source. Such an origin would certainly seem the most probable one for the well-known Jersey grape cup, which has been claimed as a prototype of those in Wessex, since it is only in the Pyrenean area that all-over knob decoration elsewhere occurs. Further discussion is required, and much fuller publication of material, before firm conclusions can be reached on the channels of diffusion of this neglected pottery style. Mrs Hawkes has directed attention to its importance for an understanding of the Early and Middle Bronze Ages.

Reviewing the cultural sequence as a whole it seems permissible to regard Jersey, as Guernsey must be regarded, as a maritime settlement from Morbihan. It was a slightly earlier settlement than Guernsey, before the Breton Chassey wares had given place to beakers. It maintained contact with the Atlantic route and in due course received thence beakers which are of markedly Pyrenean and Galician type. Later it may possibly have received its finger-tip, applied-band ware by that highway of Mediterranean peoples and cultures. Later still it received the biconical handled jars which are typical of Brittany and Cornwall. At some time in the British Middle Bronze Age the traffic had ceased and thereafter the Channel Islands declined into provincial areas of the Late Bronze and Early Iron Age cultures of northern France.

LINDSAY SCOTT.

THE VICTORIA HISTORY OF THE COUNTY OF OXFORD. *Edited by* L. F. SALZMAN. Vol. I. *Published for the University of London Institute of Historical Research by the Oxford University Press, 1939. pp. 498, maps and illustrations.*

This volume contains sections on geology, botany, zoology, what is still called 'Early Man' (i.e. prehistory), Romano-British remains, Anglo-Saxon remains, Domesday Survey, Political History, Schools.

In the Natural History section zoology occupies 166 pages, exactly a third of the volume, but not an excessive amount when it is remembered (1) that the Victoria Histories usually have at least five volumes, of which four are exclusively archaeological and historical; (2) that 'county zoology' is now decidedly a neglected subject, in spite of occasional efforts such as the 'survey by a team of observers who studied mice, voles and shrews in Bagley Wood between the years 1925 and 1928' (p. 217).

All the sections are by students and scholars of authority, several of very high authority and well acquainted with the region, which has been officially neglected by the adjacent University.

Some of the contributions suffer from the traditional narrative form in

ANTIQUITY

which they are cast, a legacy from Victorian days. But the vagueness of early records, the regrettable rarity of properly conducted excavations, and the absence of intensive regional study no doubt make any more adequate treatment in this volume almost impossible. The destruction of the evidence itself by gravel-diggers and aerodromes is now removing the basis upon which the prehistory of the Oxford district might have been built. O.G.S.C.

CONTRIBUTIONS TO THE GEOGRAPHY OF EGYPT. By JOHN BALL. *Cairo : Government Press, Bulaq, 1939. pp. 308, maps and illustrations. 50 piastres (10s 6d).*

This fine book is modestly described by the author as containing 'the results of a series of studies that I have made during the last few years on various subjects connected with the geography of Egypt'. It deals in succession 'with the geographical changes that have taken place in Egypt during past geological ages; the river-terraces of the Nile Valley and the evidences they furnish as to past changes in the relative levels of land and sea in the Egyptian region; the high level (early Sebilian) silts of the Nile Valley in Upper Egypt and the evidences for the former existence of a great lake in the Sudd region of the Sudan; the solid matter transported by the Nile in solution and suspension respectively; the alluvial land of Egypt; the physical history of the Faiyûm and its lake; and the Birket Quarûn fishery'.

It is in actual fact the best book to recommend to anyone who wishes to understand the physical background against which the age-long history of Egypt has been enacted. In our opinion, it is a book that the intelligent tourist and the archaeologist should have with them in the country; the maps alone would make it worth while to including it in one's luggage—they are up-to-date and illuminating. A comparison of the geological map with an earlier one in the possession of the reviewer (undated but evidently published in the first decade of this century), on the scale of 1 : 2,000,000, shows that the latter was on the whole fairly accurate as far as it went. Progress since then has enabled gaps then marked 'unexplored' to be filled in; the whole of southwest Egypt, between Gilf Kebir and Dunqul, conveniently covered in the older map by the colour-index, is now occupied with geological and geographical information not then available because no one had explored these regions, and Owenat had not yet been discovered. As many of us know, Dr Ball himself is personally responsible for much of this exploration and survey, carried out in the face of difficulties and discouragement.

Archaeologists will particularly welcome the account of the different levels of the Nile and Mediterranean and of Lake Moeris; the account of the Faiyûm is very full and illustrated by a really beautiful layered map (1 : 375,000, from

REVIEWS

the visual scale) showing the sites of the Ptolemaic towns. We wish that every future archaeological excavation report dealing with that area and period would make an effort to reprint it, even at the cost of omitting a few half-tone illustrations.

The book is written in a style which is clear and readable, and assumes a knowledge of only such technical geological terms as should be familiar to every educated person. It answers concisely the sort of questions that occur to the casual visitor; such as the origin and nature of the series of limestone ridges that run parallel to the coast west of Alexandria, and even outcrop strangely in Alexandria itself. They 'almost certainly originated from the consolidation of ancient littoral sand-dunes', formed at a time, about 12,000 or 10,000 B.C. (the Sebilian period), when the Mediterranean stood at least 43 metres lower than today, and the climate was even drier. These ridges abound in archaeological remains which have never been properly investigated (see *Proc. Prehistoric Society*, 1938, p. 238).

This is a very inadequate account of a scholarly but most readable book; we can only hope that it may arouse interest in the book itself and increase its sale.

O.G.S.C.

THE HISTORY OF THE FORMER HAN DYNASTY. By PAN KU.

Vol. 1. A critical translation with annotations by HOMER H. DUBS. *Kegan Paul*, 1938. pp. xiv, 339.

This is the first instalment of a complete English version of the important *Ch'ien han shu*, or at least of the annals which form the first part of that work, for the translation of the equally important second and third parts does not seem to be contemplated. This great and valuable piece of work has been undertaken at the invitation of the American Council of Learned Societies, and it is hard for those who are concerned with the Far East to be too grateful to those who have planned, supported, and are carrying out this scheme for placing complete versions of the great early historical documents of the Chinese at their service. It might seem invidious to compare the present work with Chavannes' *Mémoires Historiques*, but in one respect at least this has the advantage over that, since it has on each page the Chinese text side by side with the English version; and generally the work seems to be satisfactorily done. The translation is, however, needlessly marred by the excessive use of square brackets, as many as twenty-one pairs on half a page; and it may be hoped that the future volumes will use this device more sparingly. In conclusion it is most earnestly to be desired that this preliminary volume may receive such a welcome as it deserves and as will ensure the completion of this work and the continuance of the excellent scheme.

A. C. MOULE.

ANTIQUITY

THE SKY-RELIGION IN EGYPT, ITS ANTIQUITY AND EFFECTS.

By G. A. WAINWRIGHT. *Cambridge University Press*, 1938. pp. xvi, 121. 8s 6d.

The foundations upon which Mr Wainwright seeks to establish his thesis go very far back, in fact to Palaeolithic times, when much of the Sahara, now the high desert on each side of the Nile, was savannah and parkland swarming with game. At that period the Nile, if it existed as we know it today, was of little account in the life of the people, for they occupied what is now the high desert plateau. It is then not surprising that the sky religion of which Mr Wainwright writes is not the sun cult of Egypt that we all know—this was much later—but a cult of the blue sky and of rain by Palaeolithic man, a cult which the author recognizes as surviving in attenuated form through the predynastic civilizations into the full dynastic civilization of Egypt.

We all love a bold hypothesis, and if, as the present reviewer has shown, the beliefs of the New Empire (probably very much older than this) still flourish in the Cairo bazaars, it might be argued that there is no reason why cults of the highest antiquity should not survive into historic times. But such argument ignores the total change in mode of life between even late palaeolithic hunters and corn-growing man of the Nile Valley, so that, although it is not impossible to think of European examples hinting at a possibly similar overlap, it is probably wiser to set aside as not proven the author's Palaeolithic origins and to consider quite a different matter, the evidence he adduces as to the cult of Seth in sensibly later times.

It is a main part of Mr Wainwright's argument that the god, or chief god, of the old sky religion was Seth, particularly concerned with rain and weather, while Osiris, the god of the settled Nile valley and a new mode of life—for the two gods did not fuse—became the successful rival of Seth, whose worship he increasingly superseded, the older cult changing its form yet lingering in folk belief, as older faiths commonly do when in contact with younger rivals better adapted to a new environment. The author sheds new light on the importance of these old features, and the main purpose of the book is to dissect out these survivals, to consider the metamorphoses they underwent, to study their significance, and to group them into a coherent scheme.

Associated with the old sky and rain god was the king, a divine king, apparently very much on the present day Nilotic pattern, who, like a Shilluk king, was slain ceremonially, though in Egypt Mr Wainwright thinks he was killed by burning. Whether this were so or not, the *Pyramid Texts* offer evidence of identification of Seth and the Pharaoh, both of whom were liable to death and yet, in the *Texts*, successfully escaped it.

Now there is no doubt that the Pharaoh was a corn king, above all

REVIEWS

concerned with irrigation (witness the well-known cutting of the dyke and grain-sowing scenes on the Hieraconpolis mace-heads). An ingenious argument suggests that the Hoeing of Earth ceremonies of the eighteenth and nineteenth dynasties incorporated the blood of Seth, or at any rate of his companions, with the newly turned clods.

'Seth sacrifices clearly took place with a view to fertilizing the earth, and in the beginning the ruler had played the part of the god. A remarkably and hitherto unparalleled text has just been published by Gardiner. . . . Among other things it shows that as late as the Nineteenth Dynasty a section of the Egyptians were known to be "Followers of Seth", Typhonians, by certain marks and characteristics. Of such it is said: "The god in him is Seth", and he declares himself on at least one occasion by the redness of his devotee's eyes'.

So the evidence is built up, and it becomes clear that the official and religious records of the Pharaohs enshrine the cult of old sky and storm god responsible for the fertility of the land and the health of people. The evidence is greatly strengthened by the folk beliefs of Egypt transmitted to us by the classical authors, as when Plutarch records that the animals in whom Typhon-Seth were incarnate were held responsible for the health of the people and for water for their crops. In fact Mr Wainwright gets a great deal out of the classical authors, and his collection and critical juxtaposition of their stories is one of the prime merits of this most interesting work.

C. G. SELIGMAN.

WHITE HORSE HILL AND SURROUNDING COUNTRY. By L. V. GRINSELL. London: Saint Catherine Press, 1939. pp. 66, 7 illustrations, map. 4s 6d.

This book is in the best tradition of English topographical studies, and should be bought by all who love the Wessex downs, or what little remains of them. It differs from the ordinary guide-book compilation in the fact that Mr Grinsell is a serious student who has specialized in the study of barrows and made some valuable discoveries of his own. Two of them are in this district (pp. 19, 23). It contains, so far as we can judge, only a few errors and those quite trivial; there are a few things omitted that might have been inserted, but that can be said of almost any book like this. Three of Major Allen's air-photographs are reproduced; the technical excellence and value of these are now so well known to all that further comment is needless.

When writing a review of any book one has to give readers some idea of its contents and to appraise its value. If one then proceeds to criticize, there is a risk of conveying a wholly false impression if a list of alleged shortcomings is given. Such lists could be compiled by any reviewer sufficiently well acquainted with his subject; let it at once be clear that the few criticisms here made must

ANTIQUITY

not be allowed to count at all seriously against the real excellence and high archaeological standard achieved by the author.

The little book deals with the field-archaeology of a rich downland region ; it breathes the open air, even in the list of contents—the White Horse, hill-forts, Dragon Hill, Wayland's Smithy (a chambered long barrow), the Lambourne Seven Barrows, Celtic fields, strip-lynchets, the Ridgeway and Icknield way, the sarsens, the Blowing Stone. Perhaps the most strange omission is the splendid system of Celtic fields on Fognam Down, just outside Ashdown Park. This is all the more remarkable because we are sure the author knows all about it ; it has been photographed by Major Allen, and is traversed by the road from Lambourne to Ashbury. It is one of the finest examples in existence, is easily accessible, and is just the thing to show the budding field-archaeologist for whom the book is intended. With them is associated a small square earthwork, a probably contemporary pond (now dry) with a linear earthwork followed by the county boundary—this last an interesting and suggestive feature. There are also some nice hut-platforms, and the whole area is strewn with Romano-British potsherds.

The bank round Ashdown Copse is later than the Celtic fields and, as Mr Grinsell says, probably medieval. It was almost certainly made by the Glastonbury monks who owned the manor of Ashbury. It was quite normal to enclose such woods as this with a ditch and bank, and it is probable that documentary evidence of this could be found.

The derivation of ' sarsen ' from ' saracen ' is undoubtedly correct, and the other two might well be ignored. Saracens were known in medieval times, and it is surely illogical to deny this derivation on the ground that the stones ' must have had a name before the Saracens were heard of in this country ' (p. 33).

We miss, in the chapter on the White Horse, that pleasant old Wessex rhyme about King Alfred and ' they warshurds (?) the Danes '.

May not the name ' Dragon Hill ' be from the White Horse itself ? This might well be called a dragon by the country-folk. Any connexion with the purely literary and Welsh Pendragon is rightly set aside by the author.

On p. 50 ' Flagaffora ' should be ' faga flora ' (spotted floor).

But these are trifles. We are indebted to both author and publisher for a charming book ; may we add a suggestion to both that similar (but perhaps more ambitious) books could be written on such subjects as the Icknield Way (and its associated but distinct branches, Ashwell Street and the Ridgeway), and Wansdyke ? To the future author of such books we would throw the bait of a delightful tramping holiday ; to the publisher (knowing publishers of old !) the lure of good and steady sales. There is a very definite need of books like this by informed, reliable field-archaeologists, and they would sell. O.G.S.C.

REVIEWS

THE ALUM FARM, with a history of the alum trade in Northeast Yorkshire.

By R. B. TURTON. *Whitby: Horne*, 1938. pp. 299. 12s 6d.

A detailed account of the establishment of the alum trade in England in the 16th and 17th centuries is given. The State took a great part in the foundation of this useful industry, and the many problems arising from its protection were dealt with in a more or less satisfactory way. As the author says: 'There is hardly any aspect of the vicissitudes of modern industry upon which this history does not throw a light'.

The manufacture of alum was carried on in Dorset, Yorkshire and Lancashire and Ireland. It may not be generally known that Alum Bay in the Isle of Wight and Alum Chine in Dorset owe their names to the early trade in this mineral.

There is a chapter on the Chaloner family, who were closely associated with the alum trade. The book is full of documented details that should be of great interest to persons concerned with the economic history of the period and the districts concerned.

DINA P. DOBSON.

THE EXCAVATION OF TELL BEIT MIRSIM. II. THE BRONZE AGE.

By W. F. ALBRIGHT. *Annual of the American Schools of Oriental Research*, xvii. *New Haven*, 1938. pp. 96 and 56 plates.

Volume II is devoted to the architectural and non-ceramic remains of the Bronze Age; the pottery has already been analysed in detail in vols. I and IA, but the author here revises his datings in the light of publications subsequent to 1933. Seven of the nine strata, lettered from the top downwards, are described; the last two being Iron Age, are postponed to vol. IV. The oldest occupation is represented by a thin deposit on rock comprising flint sickle-teeth and knives and pottery, comparable to that from tomb A at Jericho and assigned to the latter part of the third millennium B.C. Town H was already surrounded by a wall, founded on the debris of the previous occupations; it dates from about 2000 B.C., when nomadic tribes from the desert were settling down in Palestine. When the process was completed the settlers built the Middle Bronze Age II towns G-F. G was defended by a stone glacis, 3.20 m. wide and re-inforced at intervals by towers. No estimate is given of the area of this—or any other—settlement. Copper was now worked on the site since a one-piece stone mould for flat axes as well as a few copper pins and chisels was recovered. Though these settlements were contemporary with the Middle Kingdom, no Egyptian imports are recorded here.

In the next period, E, the stone glacis was replaced by a rampart of *terre pisée*. In a footnote Albright defends his thesis that this type of fortification is distinctively Hyksos, but admits that his theory that it was introduced by

ANTIQUITY

Indo-Iranian migrations is not demonstrated. In D the citizens returned to the stone glacis construction. One gate was partly exposed, but the plan on plate 54 is far from clear and gives the impression that the reconstruction is based on rather slender evidence. The principal house recovered was of the courtyard type and two-storeyed. A number of primitively shaped copper tools, more one-piece stone moulds, two limestone 'crucibles' and part of an ingot of Minoan-Cypriote form indicate an expansion of the local metal industry. The 'crucibles' were about 25 cm. in internal diameter and 10 cm. deep with a duct running out obliquely from the bottom. No trace of metal was observed on them and they look like some sort of oil mill. The stone pommels of the daggers belong to the Egyptian-Minoan series and might have yielded useful comparisons with Aegean types had section drawings accompanied the photographs. An ivory teetotum, of truncated pyramidal form, playing men (pyramidal and tetrahedral), and part of the inlay of a gaming board formed the appurtenances of a game which Albright now agrees originated in Sumer. Connexions with Egypt are demonstrated by scarabs. A bone inlay, engraved with a lively representation of a running fawn, and the lower part of a stela, depicting a 'Serpent Goddess', illustrate the native art of Palestine before 1550 B.C.

Town D presumably fell when the Egyptians conquered Palestine. Its site is thought to have lain waste for a century or two. Thereafter town C was erected. Though it may have lasted for more than two centuries, it yielded far less interesting material than its forerunners. No tombs have been found at Tell Beit Mirsim so that show-pieces have been scarce. If thus disappointing to the collector, from the scientific point of view the accurate determination of the ceramic and architectural sequence makes the site very important. A fifth campaign is, however, needed to complete the record, but has been repeatedly postponed owing to political difficulties.

V. G. CHILDE.

KRETISCHE KUNST: Versuch einer Deutung. By G. A. S. SNIJDER. Berlin, Verlag Gebr. Mann, 1936. pp. 174, and 32 pages of plates. RM. 39.00 (export, RM. 29.25).

The moderns have always felt uneasy before Minoan art, as something unfamiliar and partly incomprehensible. Is it, or is it not, the earliest 'European' art? Professor Snijder, the Director of the Allard-Pierson Museum at Amsterdam, has given us a new 'attempt at interpretation' by going to the Marburg school of psychologists for his solution. E. Jaensch and his followers have worked on the demonstrable faculty of some people to *see*, literally and not in the mind's eye, images or pictures of what has already been before them physically. This 'eidetic' faculty is wider-spread than most suppose: eidetics

REVIEWS

actually *see*, not *imagine* : some are dull-natured persons, whose visions* are, as it were, mechanical (akin to the green after-images of intently observed red objects) ; others are very lively, identify their visions with themselves, and give play to imagination, so that their visions are partially concepts. The two types are called τ and β , since their physical constitutions, if pathological, would be characteristic respectively of tetanus and Basedow's (Graves's) disease. But nearly all examined eidetics have been of mixed type and with no pathological symptoms, i.e. psychophysically normal. It is said that at least a third of all children are eidetic, and that this state is probably in fact normal to youth, but usually disappears with the development of the reason, specially through speech, long before adult life : if retained, it is often at the expense of the rational development, but not always : e.g. Leonardo da Vinci, and a living painter cited by Dr Snijder. But it is one thing to see a vision and another to put a pencil round it, since the very attainment of muscular control tends to expel the eidetic faculty, and even when it survives, the act of drawing usually distorts and elongates the vision. Dr Snijder's account of eidetics and their art, and his pictures, need to be carefully studied, and it will already be clear that the importance of his book goes far beyond what its title suggests.

The eidetic theory has already been applied to palaeolithic cave-drawings, 'memory-pictures' (Wundt), 'physioplasmic—as distinguished from ideoplasmic—art' (Verworn), and 'eidetic visions' (R. R. Schmidt), inspired by *lusus naturae* in the rock. Dr Snijder discusses this very fully, and its relation to the art of living 'primitives' and of persons of sub-normal mentality. *Total* eidetics (rarely found today) do not distinguish between perceptions and conceptions ; and so their drawings—their fixed visions—are extremely exact and as it were, 'snapshots' ; but they lack grasp of structure and power of selection, abstraction and relation, and are individual, not generalized, pictures, uncertain and uneasy isolations ; and the figures tend to be distorted in the drawing, and to 'swim in space'. These characteristics are modified in proportion to the degree of eideticism in the individual.

The Cretans, Dr Snijder maintains, were living, at least down to L.M.I., mainly in the totally eidetic state ; physically (as shown in art representations) they would belong to the β type ; this is not surprising when one considers how much lime there must be in their diet (Crete = 'the chalk island'), for this is a specific against tetanus. Visions of the τ type are static, those of the β type move and change : hence the sense of movement in Minoan art. The eidetic sees his world in very bright colours ; but he sometimes, it seems, 'sees blue' in place of the colours of nature (cp. some of the frescoes). And the tendency to draw hybrids occurs in Minoan art (e.g. flowers) and in that of living eidetics.

* I shall use 'vision' to translate *Anschauungsbild*, without, of course, any mystical connotation.

ANTIQUITY

To go outside painting : Minoan *architecture* lacks lucidity : the parts are not related to the whole. The Cretan would extend his palace indefinitely, without feeling the need for an organized plan ; light-wells and pierced walls gave him vistas, stairways and their traffic appealed to his love of movement. *Sculpture*, known only in its minor forms, shows the same love of movement, instinct for outline, and fondness for detail, and is equally wanting in structural interrelation. Of *language*, we can only judge from what is known or surmised of pre-Greek survivals in Greek (Dr Snijder disclaims expert knowledge) : these include a mass of specialized names (animals, plants, architectural terms, cult-objects, etc.), but the generic words were provided by the Greeks themselves. This pre-Greek speech seems to have been primitive in character, as in the use of distinct words to designate the same thing in different relations (cp. Lévy-Bruhl) : and Dr Snijder infers that the Minoans, so far as this speech was theirs, lacked generic terms—a rash assumption, surely, when we consider the habits of any people entering a strange land full of unfamiliar particulars. Of *writing*, it may seem premature to speculate : yet, if we take the most developed form of the hitherto undeciphered Minoan script, we find perhaps some phonetic signs, but also certainly many ideograms representing definite concrete objects. In *literature*, the Homeric similes distinguished by scholars as ‘early’ seem to provide, in their vivid successions of pictures with each of which the poet identifies his own experience, what we might expect to have come down from an eidetic people. Finally, on *religion* Dr Snijder makes some profoundly interesting remarks : for instance, epiphanies are common in Minoan art—would not eidetics actually ‘see’ the god, and ought we not to take more literally than we do many examples (not only in Crete) of such revelations ?

Dr Snijder very properly discusses the racial elements of which the Minoans were composed : he thinks that Egyptian influence has been exaggerated, but accepts some immigration, of related stocks, from Anatolia, whereby, especially in East Crete, the native art was ‘activated’. But the native foundation remained always paramount, and was, as Karo said, in the deepest sense un-Greek and un-European. Hence we can suppose no immigration from the North. The general affinities—but no more than this—are to be sought in a wide region stretching from Egypt and Mesopotamia to West Europe, and including North Africa. Within this area the same kind of mentality produced Altamira, Knossos, and the related though degenerate art found in North Africa down to Roman times : Malta’s importance is not overlooked, but the Minoans, whatever their origins, lived mainly in isolation, retaining (and developing ?) their eidetic mentality.

The ‘European’ spirit, by contrast, is first seen on the mainland of Greece, where ‘Mycenaean’ culture is rooted in Middle Helladic, i.e. Greek culture,

REVIEWS

and was at first quite unconnected with Crete. Afterwards, though strongly affected by Minoan art, it kept its own characteristics in many ways and developed them : the mainlanders treated the Cretans as the Romans treated the Greeks ; in conquering, they consciously absorbed. Karo's work on the Shaft Graves is reinforced by a penetrating analysis of the differences between Minoan and mainland art. The latter grasps essentials and structure, and is strongly ornamental, i.e. has the power of abstraction—*Gebundenheit*, contrasted with Minoan *Lebendigkeit*. This is seen also in mainland architecture and town-planning ; and perhaps the Knossian palace-style vases in fact reflect a mainland influence. But all was not gain, for the ornamental sense, departing more and more from the Cretan lifelike models, led to degeneration until the kindred blood of the Dorians re-invigorated it.

Further chapters deal with the significance of eidetic in Minoan art and with racial theory. Dr Snijder stresses that there is a personal element in the art of an eidetic, especially if he is of the B type : I take this opportunity of recognizing this, since Dr Snijder refers to an article I wrote after hearing him lecture but before his book was published. We must, he urges in Croce's phrase, ' see with the artist's own eye ' , and the Minoan artist's eye was that of an eidetic. All Cretans were not necessarily eidetic : and we may have to reckon with the stimulation of drugs ; notice the Minoan tree-cult, associated with ecstasy. This suggestion is developed in relation to modern medical research. But, indeed, without this stimulus (the place of which in the ancient world needs examining) an eidetic would not distinguish sharply between subjective and objective.

Any one review of this brilliant and very fascinating book must be unsatisfactory, because its author has drawn from so many sources, and invited the criticism of experts in so many fields. The archaeologist and general reader will naturally wish to know how far the conclusions of the Marburg school are accepted by psychologists : they may also find the book at times hard reading. But mostly Dr Snijder writes in easy German, and his humour and common sense are delightful. There is some repetition, and a good deal of, I think, special pleading ; but the matter excuses the method.

In conclusion, I apologise for the date of this review, which is due to a succession of causes but will not, I hope, decrease the interest which this inspiring book abundantly deserves to arouse.

W. L. CUTTLE.

THE PRAXITELES MARBLE GROUP IN OLYMPIA. By OSCAR ANTONSSON. *Stockholm, and Cambridge University Press, 1937. pp. 209, with 26 figures and 32 plates. 10s 6d.*

The problem of the Hermes of Olympia was the subject of an article in *ANTIQUITY* (June 1934, pp. 151 f.). It will be recalled that, working on the

study of technique, Carl Blümel had concluded that this statue was a copy of Roman date, and not an original by Praxiteles. His thesis produced vigorous controversy, the main lines of which I summarized in my article: the question remains controversial. Mr Antonsson wishes to give it an entirely new turn; he holds that the statue is an original by Praxiteles, but was altered, presumably after some chance injury, in Roman Imperial times. It originally represented not Hermes but Pan; he was wearing a panther-skin, and this explains both the chisel-marks on the back, and the presence of the strut, which is all that the alterer left of the panther's head. Traces of the paws are also said to be discernible on the back of the tree-trunk. The identification of the figure with Pan is further supported by the discovery of the traces of a carved ivy-wreath on the head, and of alteration of the ears, which were originally distinctly pointed. Moreover, the nose is of an animal type—'a ram's nozzle'—suited to Pan but not to Hermes; and probably too there were originally horns. The polish of the statue was imparted to it at the time of its rehandling.

Nor is this all: since the identification with Pan enables us to take into account a new set of literary references to works by Praxiteles, we are led to conclude that this statue was originally a figure in a group, of which the other member was a nymph. An attempt is made to reconstruct such a group with the aid of the Girl from Antium, though finality in this respect is not claimed.

The most important parts of this theory depend, of course, upon observations of the surface of the marble of the statue itself. The arguments are lengthy, and—as has already been said of this controversy—'only in the little square room at Olympia can the case be argued out'. The present time is not favourable for visits to Olympia, and I cannot do more than say that some at any rate who have looked at the statue again in the light of this book are not in agreement with its conclusions; and that in certain matters, such as the pointed shape which we are assured the ears originally possessed, I find it impossible to be convinced.

The reconstructed specimen group which Mr Antonsson offers us is, it must be confessed, a most unpleasing affair; hitherto in this controversy it has been Praxiteles's detractors who have been at pains to disparage the Olympia statue; it has been left for one who champions his authorship of it to deal it the most unkindest cut of all.

The array of drawings and photographs of reconstructions is far from convincing, and in particular the method of emphasizing, by inking in on a photograph, the supposed traces of what the author wishes us to see there seems highly dangerous. It is of a piece with his handling of the literary 'evidence': 'goat-footed' in an epigram is only to be taken metaphorically, because our statue has human feet; and *askos* does not mean a wine-skin, but is playfully used of the infant Dionysos: for the latter Mr Antonsson compares a passage in

REVIEWS

Theophrastus's *Characters*, relying on the 8th edition of 'Liddell and Scott': he does not seem to have looked at the context in Theophrastus, and the new (9th) edition of 'Liddell and Scott' hardly supports him. It may be remarked in passing that the epigrams he quotes refer (for what it is worth) to works of *Pentelic* marble (not Parian) and of the marble described by the adjective *lygdinos*, which is used, at any rate by Philostratus, to describe a marble other than Parian. When he comes to coins, he chooses what he likes to suit his purpose, and discards what he has no use for: thus, a coin shows Pan with goat's legs and a beard: but 'apart from these differences, there can be little doubt that Pan of the coins is related to Olympia Pan'. Again, 'the fact that Pan of the coins and Pan of the marble group wear skins of different animals [goat and panther respectively] *makes no difference* (my italics)'. This is his style of criticism—when a poet says a statue is goat-legged, he doesn't mean it literally; when a coin shows a goat's legs, it is a minor difference which we can think away; and a difference in the animal's skin worn (or rather presumed to have once been worn in the case of the statue) is no difference at all.

The same lack of judgment is shown when Mr Antonsson seeks to justify the identification by reference to religious antiquities. 'Is not Pan, the premier god of Arcadia', he asks, 'a much more suitable symbol of his country than Hermes?' It should not need a reference to Farnell's 'Cults' (v. 1) to remind him of the deep attachment of the Arcadians to Hermes; and indeed Farnell (*id.*, 29) actually says that 'we must always bear in mind that the special characteristics of a god depend on those who are his most devoted worshippers. In the case of Hermes, these were the Arcadians, who at an early period were famous athletes, and had much to do with the rise of Olympia into predominance; they may have borne their deity, an athlete like themselves, to the Altis, whence this conception of him may have spread over the Hellenic world'.

I hope I do not do the very painstaking author an injustice when I say that my impression of his book—useful though it will be in any further studies of the problem—is that he has started from certain premises, and tried to make far too much fit into them, whether it be in what he sees in chisel-marks on the statue, or in what he adduces as subsidiary support.

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TWO LIVES OF SAINT CUTHBERT: a Life by an Anonymous Monk of Lindisfarne and Bede's Prose Life. Texts, translations, and notes by BERTRAM COLGRAVE. *Cambridge University Press*. 21s.

Cuthbert, bishop of Lindisfarne and later the most powerful of Northumbrian saints, died on 20 March 687, and the two earliest prose lives were put together well within the lifetime of men and women who had known him. The Anonymous Life, written by a monk of Lindisfarne between 699 and 705, was

completely recast by Bede about 721; there are also a number of additions, the most important being Herefrith's account of Cuthbert's last hours. In lucidity and arrangement Bede's was certainly an improvement on the Anonymous Life, though it sometimes fell short in verisimilitude. Thus the account of the eight-year-old Cuthbert and his fellows standing on their heads stark-naked is bowdlerised by Bede, who, again, does not improve on Cuthbert's vision of Hathuwald's fall to death as told in Anon. Incidentally Hathuwald, not Hadwald, is, I think, the normalised form to be adopted in the translation at p. 127 and at p. 265, and Pleggils, rather than Plecgils, at p. 79; Pleg- and -gils are sufficiently recorded as elements in Old English personal names.

Mr Colgrave's excellent edition and translation are long overdue. The nineteenth-century editors were too dependent on their seventeenth-century predecessors, who had used a fraction only of the manuscript evidence collated by Mr Colgrave. The collation of seven manuscripts of Anon. and thirty-eight of Bede (distributed among seven different countries) has been an arduous task carried out most successfully. In face of the manuscript evidence the editor might perhaps have boldly emended *Osingadun* and *Tesgeta* to *Ofingadun* and *Tefgeta*; insular *f* was easily misread as *s*. The translation is pleasant, but is 'about half a piece of swine's lard' sufficiently precise for *quasi dimidiam suis adipem* (p. 102)? And is 'chalice', now specialised in the sense of 'communion vessel', the right rendering of *poculum* (p. 114)? The *poculum letitie* was surely something like the *liðwæge* which Hygd, queen of the Geatas, bore to Beowulf and his companions on their return from Denmark (*Beowulf* 1980-3).

The notes are full without being overloaded, but a few place-names, Ahse, Bedesfeld, Hruringaham, Kintis and Medilwong, defy identification.

Mr Colgrave pays some attention to the iconography of the saint, briefly mentioning the paintings on the stalls in Carlisle Cathedral and the great window in York Minster given by Cardinal Langley, bishop of Durham. The amount of old stained glass in the saint's own area is pitifully small and no representation survives in Northumberland or Durham, but reference may be made to figures at Methley (West Riding), Wintringham (East Riding), Emneth and Wiggenhall St. Mary Magdalene (Norfolk), Christ Church, Oxford, and Cotherstone (Somerset).

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